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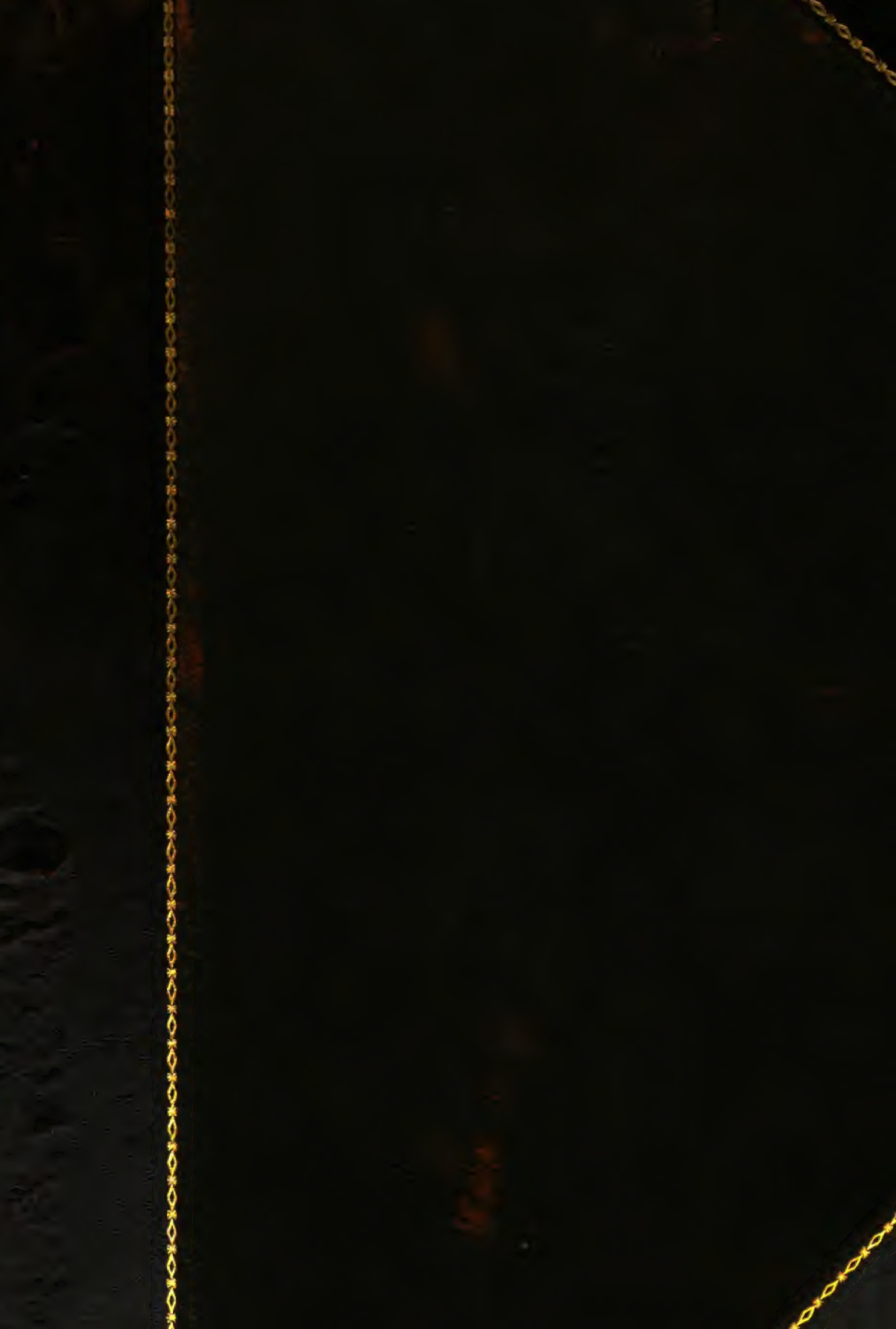

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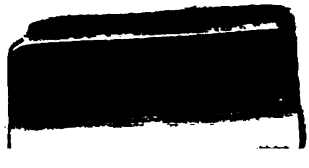

SELF CULTURE

A Magazine of Knowledge

With Departments devoted to the Interests of . . .

THE HOME UNIVERSITY LEAGUE

Edited by G. MERCER ADAM

VOLUME V

APRIL TO SEPTEMBER, 1897

Every person has two educations, one which he receives from others, and one, more important, which he gives to himself.—Gibbon.

THE WERNER COMPANY

Publishers

CHICAGO AKRON, OHIO NEW YORK

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SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V APRIL, 1897 NO. 1

AMERICAN INFLUENCE ON EUROPE

MANY Americans and most Europeans regard the United States as an isolated country, having little to do with international affairs. The bubbling cauldron of diplomacy seems especially a boiling pot of the Eastern hemisphere. The great powers of Europe think themselves concerned alone with the China trade, Armenian massacres, the partition of Africa, protectorates in Madagascar and the Samoan islands, reprisals on South American republics, interoceanic canals, and the general management of human affairs outside the United States. They think international law an invention of their own and a system they have imposed on America to control her relations to them where she has any. Few dream that some of the most characteristic features of diplomacy had their origin in this country. Hence the attitude of foreign governments is contemptuous towards us, as a power that may be neglected in their world-embracing schemes and aggressions.

Proof of this statement may be found in the almost unanimous denunciation of Mr. Cleveland's message asking for a Venezuelan Commission to report on the boundary claim of British Guiana, and of the assumption of this administration to intervene in the pacification of Cuba. Until the American contention was admitted by the British and Spanish governments, there was scarcely a periodical in Europe that did not deride the pretension of the United States to have a voice in any matter of diplomacy not concerned with affairs arising in our own territory. Indeed, official Europe, while forever intermeddling with each other's projects and forever appropriating jurisdiction over all uncivilized and half-civilized people, conceives that it has done well in letting us alone, and usually refuses to recognize that we have any interest in international questions.

There are several reasons for this European feeling of exclusion. Among them are these. Washington's "Farewell Address," one of the political gospels of this country, advises us to make no "entangling alliances," and so potent have the maxims of that great and wise man been with his revering countrymen, that his injunction has been the policy hitherto of the United States. So long as Europe, with which the greater part of our foreign commerce is concerned, was distant six weeks' or even a month's journey, obedience to this maxim was almost a necessity. Yet even then, the country had foreign complications, chiefly through its proximity to the West Indies, where a century ago the fleets of Great Britain, France and Spain were in the habit of making reprisals upon each other and each other's colonies. There our trading ships were made the prizes of belligerent powers. It was here that the French spoliation claims arose, which were settled with France by treaty for $5,000,000 in 1801.

At this time Napoleon was only First Consul of a Republic, which Europe was trying to engulph in floods of hostility as threatening the stability of thrones and publishing a new doctrine of politics. France then thought that America ought to share her quarrel, not only because she was trying to establish a government like our own, but because she had assisted the United States in gaining their independence and in 1777 had

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made an offensive and defensive league with them, which neither party could relinquish without the consent of the other. It is true, in a formal sense, that that league was terminated, not without difficulty, by the treaty of 1783, in which Great Britain, France and the United States joined. Into this treaty France was forced by the negotiations of the American Commissioners, Franklin, Adams and Jay, in the previous year, through which the British government was pledged to recognize the independence of her revolted colonies. The Shelburne ministry was not so desirous to let the colonies utterly go as to detach the United States from the French alliance; France had no wish to lose her American reinforcement and so prolonged negotiations; the States desired peace for the sake of carrying on an unmolested commerce. In France England was regarded as a natural and inveterate foe, as a hen might regard a hawk that only ceased predatory designs on her chicks when in pursuit of other quarry. Hence, France wished the American alliance to be perpetual and was disposed to assume that the States were breaking faith in withdrawing from it.

This feeling had its avowal when the Jay treaty was published in 1794, and was followed by French depredations on American commerce in the West Indies. That treaty contained a stipulation that the United States would not take any part with France in the war then raging between that power and Great Britain, a stipulation very dear to President Washington and the Federalists, whose patriotic solicitude was to secure for the infant States a chance for peaceful internal growth. But the French Convention, then in power, denounced this policy as hostile to their country.

The views of the French Republicans were faithfully reflected in the States by Jefferson, who came back from Paris in 1789 full of French sympathy and ideas to take a seat in Washington's cabinet. He was supported by the Irish refugees in this country, who, then as now, were ever eager to inflict an injury on Great Britain. Indeed, the chief political issues of Washington's administration turned on the attitude of America towards France and England. In those days the Jeffersonians wore the French cockades on their hats in the streets and in the tavern tap-rooms. Tammany hung the colors of the French Republic on the walls of its assembly-room. British flags were pulled down in Philadelphia. Citizen Genet went from Charleston to Philadelphia haranguing the people on their duty to France, and Washington was obliged to dismiss him from the national capital, minister though he was, because of his truculent criticisms and interference with American politics. Things were hot in those days; vituperation served for argument; slander profaned the foremost dignitaries. While Washington held the helm of state the American bark sailed safely over stormy waters. It was out of his own bitter experience and anxieties that the wisest of patriots implored his countrymen to take, as a maxim of solid government, his injunction to beware of "entangling alliances." And, with the exception of the recognition of the Spanish republics, the Clayton-Bulwer treaty, the withdrawal of French troops from Mexico, the Venezuelan boundary question, and Samoa and Hawaii, all matters pertaining to the Western Hemisphere, we have obeyed that injunction so dutifully that the "Father of his Country" could not but approve.

Again, the Monroe Doctrine, although in itself somewhat "entangling" in relation to foreign matters, has been universally taken as a declaration that, if Europe will keep out of the Americas the United States will look with indifference on the broils of the East. That Monroe message was in itself a sort of "entangling alliance," for it was written at the instigation of England and intended as an assurance to her that the United States would stand by her in opposing the Holy Alliance, should the powers, engaged in that Metternichian conspiracy against the freedom of the world, attempt to make themselves felt in the Spanish main. The story is thus told by the late Alexander Johnston, of Princeton. "It had become pretty evident that the Holy Alliance, in addition to its interventions in Europe to suppress popular risings, meant to aid Spain in bringing her revolted South American colonies to obedience. Great Britain had been drifting steadily away from the Alliance, and Canning, the new secretary, determined to call in the weight of the trans-Atlantic power to check it. A hint to the American

minister was followed by a few pregnant passages in President Monroe's annual message in December" (1823). Johnston further continues: "The 'Monroe Doctrine,' however, has remained the rule of foreign intercourse for all American parties. Added to the already established refusal of the United States to become entangled in any European wars or alliances, it has separated the two continents, to their common advantage." It is historically true that this doctrine has circumscribed all the "Jingoism" of this country since its promulgation.

Let us note, in passing, that when, at the beginning of President Cleveland's negotiations concerning the Venezuelan boundary in the Orinoco valley, the Marquis of Salisbury declared that the Monroe doctrine was no part of international law, he seems to have forgotten, at least so far as England has a right to object to it, George Canning's part in instigating it and the satisfaction of Great Britain with its promulgation.

While then President Monroe's message was not in terms a treaty, it was in its origin an "entangling alliance" with Great Britain. On the other hand, by separating the two continents it was a reaffirmation that the United States would have no part in European politics. Such is the American tradition, and it has been so far accepted among civilized nations that the appearance of the United States in any European complication is regarded abroad as an impertinence and a monstrous assumption. It is the more singular that the powers of Europe should be resolved to exclude the one great western nation from participation in the march of civilization for the world, because there is scarcely a nook from Oceania to Japan where they are not intervening with fleets and armies and treaties. Moreover, these treaties, as in the partition of Africa, or in the integrity of the Ottoman empire, embracing Morocco, Algiers, Egypt, and Armenia, are made among the European powers without regard to the wishes of the people whose territories and future they barter away to each other. The justification of this world-wide arrogance is the progress of civilization, and from its advancement Europe would exclude the United States as a party without interest. Again, treaties are the principal source of international law, and from its formation Europe would exclude the United States, although she would bind us by that law as fast as it is formulated.

Notwithstanding the exclusiveness of European diplomacy in regard to this country, America has had a profound influence abroad. For us there are two Europes, the one official, the other popular. In aristocratic and bureaucratic circles the United States has long been beneath consideration. To German officialdom we are a nation of parvenus; France is habitually and traditionally ignorant of what goes on beyond her borders; in England it is not good form to know either the geography or the history of this country. From critics not unfriendly, as Matthew Arnold and Th. Bentzon, we learn of our raw and uncultivated state. When foreign periodicals undertake to treat of American affairs, as in their curious attempts to explain the last presidential election, they betray an ignorance which they themselves would think unpardonable if displayed concerning Afghanistan, Tippoo Tib, or the Kanakas of Polynesia. It may be going too far to say that America has no friends among official Europe, but they are few there who seem to think that we count for much in practical affairs. If we do a noble or sensible thing, like emancipating slaves or voting for trustworthy money, Europe is surprised, and lands that are honey-combed with millionaires and privileged classes and trusts and ostentatious wealth, fall to cackling over us and wondering how a nation of dollar worshippers can do such things; as if honor and intelligence and self-respect were peculiarly European products.

On the other hand, to the unofficial and the working people, America is the land of golden dreams and hopes. This is shown by the fact that out of every seven persons dwelling in the United States one is of foreign birth. The aspiration of the meatless toilers of Europe is to get to our shores. We have more Irish here than are in the Emerald isle; as many Germans as there are in Bavaria; the scudi-begging Neapolitans crave to reach New York; the landless German farmer cherishes the hope of having a beer-saloon in an American town; the Hungarian leaves the mines where he has toiled to dig coal in Pennsylvania; the Scandinavian hopes to exchange his native land for a Minnesota farm where his

kindred already are. The influence of America along the lines of immigration has accomplished wonders for Europe. Streams of money go across the Atlantic from the immigrant to his kindred in fatherland, either to bring them hither, or to add comforts to their domestic life. Draining away the surplus toilers from the farms and shops of Europe, America advances the wages or improves the leases of the people there. Standards of industrial life are raised through comparison with those maintained in this country. The self-government conservatively and successfully practiced here, secures larger franchises for the European workman. America, by her example, has done more to ameliorate the condition of the lower classes of Europe than any other single influence. And yet the savans of that continent seem to be unaware of it, and little attempt is ever made to estimate its worth.

A curious illustration of the way in which foreign writers look at such matters may be found in a recent book on "Israel among the Nations," by the eminent Frenchman, Anatole Leroy-Beaulieu. "Over a century has elapsed," he writes, "since the emancipation of the Jews proclaimed by the French Revolution." He thinks France took the "initiative;" that the fall of the Bastile gave the whole world an anniversary; and he speaks of the sentence in the "Declaration of the Rights of Man," that "Men are born, and remain, free and equal in rights," as if the sentiment were original with the Constituent Assembly sitting in Paris in 1791. In fact his view in general is that the regeneration of Europe has no earlier antecedents than the French Revolution. Yet his words recall a somewhat similar axiom solemnly proclaimed fifteen years earlier in a Quaker city on the bank of the Delaware. Jefferson wrote that "all men are created free and equal, and are endowed by their Creator with certain inalienable rights, and among these are life, liberty and the pursuit of happiness."

That the example of the United States added materially to the resolution and confidence with which the work of the French Revolution was carried on, needs to-day no emphasis. It was on American soil that commonwealths without an established religion were first erected. Freedom of conscience and the separation of church and state are as old as Roger Williams in Rhode Island, as William Penn in Pennsylvania, and as Cecil Calvert in Maryland. The gospel of liberty was carried to France by the soldiers and sailors who fought under Rochambeau and DeGrasse at Yorktown. Who can estimate the effect of returning ten thousand French soldiers and sailors to France from scenes where they had fought for the cause of liberty and self-government? Before their return in 1780 theories of constitutional government were the pleasant contemplation of courtly circles, savans and philosophers, who had little intention to experiment with them. Liberty and the "rights of man" were terms of dilettantism and fashion, and had no hold upon either statesmen or people. After these champions went home they became voices of hope and emancipation to the populace. At the time of the American Revolution there was not a constitutional government in all Europe outside of Switzerland and Great Britain, and in the latter country George III. was laboring with fatuous success to restore government by the "divine right of kings." Now there is not a nation of that continent west of Turkey and Russia that does not have a popular representative government.

It was the success of America that fired the heart of European peoples and made them resolute to achieve the liberty of individuals. It was the prudence of America that taught monarchs to trust the people and showed statesmen how to establish representative legislatures. For all the advancement made this century in personal rights the European finds a sufficient cause in the French Revolution. But surely the ephemeral and turbulent republics of France could give but little assurance of stability and peaceful progress as an inducement to other nations to rest their governments on a popular vote. Neither is it a vain speculation that there would have been no French Revolution had not American ideals become the possession of the people. No, it is the calm serenity and solidity of our American commonwealths, which rise composedly out of the turbulence and dissension of electoral contests, that has given dignity and progress to European class emancipation.

Nor is this all. There are two classes of treaties, those that deal with computa-

ble values and those that deal with principles. The setting up of Belgium, in 1831, as an independent kingdom, is an example of the first class; the Convention of Paris, in 1856, concerning neutrals in war, is an example of the second. It is this last sort that most profoundly influences and is most readily incorporated with international law. Now of these, the United States have given rise to no mean share, whether estimated by their importance or by their number. Extradition of criminals is now an almost universal practice of civilized nations. In 1794 the Jay treaty accorded to Great Britain the rendition of persons who fled to the United States to escape the penalties of crime and exacted a like privilege. This is the first precedent of the sort on record. Forty-eight years later this comity was put on broader and more permanent ground, and the treaty then negotiated is in force to-day. One principle, however, the United States stood upon, and it too has become a feature of all modern extradition treaties. This government would not give up a refugee charged only with political offenses. This position has not done much to mitigate the rancor of rulers towards so-called treason. It has done much to promote liberty of petition, discussion, and political action.

The war of 1812–15 was fought to put an end to the British search of American vessels and the impressment of seamen. At that time, this conduct was common among European nations. There was no law nor much sentiment against it abroad. In the treaty of Ghent, 1815, which brought hostilities to a close, Great Britain receded from none of her positions, but she did thereafter abandon their practice. Now, such is the universal feeling about it, that if one power in Europe were to do (as was done by Great Britain in 1808 in Cheasapeake Bay to one of our vessels) to a ship of another nation, namely, bring her to and take seamen from her deck, this would be an instant cause of war. Few historical events are more curious than the attitude of England when Mason and Slidell were taken from the deck of the steamer "Trent." Then she appeared as the stern champion of the principle she refused to concede in the treaty of Ghent to America.

In this war another principle was involved, which is now received among civilized people as international law. It is the right of a man to expatriate himself. At that time no government advocated this doctrine, save that of the United States. A half century later, our minister to Berlin, George Bancroft, pressed this doctrine on the Prussian government in Berlin and secured its recognition. Thence it spread to other countries, and now the right of a man to change his allegiance is recognized as two nations may agree upon the terms,—a renunciation of the old European doctrine that a man's allegiance was forever determined for him by his birthplace.

At the close of the Crimean War, the great powers of Europe assented to the Convention of Paris, 1856, respecting neutrals in time of war. It was agreed that the signatories would abolish privateering, and that a neutral flag covered an enemy's goods, except contraband of war. To this the United States professed a willingness to adhere if the Convention would go further and declare that a neutral flag made all goods free, whether contraband or not. Our adhesion was refused because of this condition, but our position is a step in advance. During the Civil War, Mr. Seward offered to sign the Convention, but Earl Russell refused to accept it unless it was expressly stipulated that the provisions of the treaty were not to be applied to the Confederate States. Here again the United States took a position in advance of Europe, and towards which international law is tending.

The treaty of Washington was another preëminently American achievement. It was the instrument by which the Alabama claims were referred to a court of arbitration. At no time before had so grave a question been settled in this manner. Nor was the chief result the recovery of $15,000,000 damages for the depredations of English-fitted war-ships, sailing under a Confederate flag, upon our commerce. The triumph of arbitration as a method of settling disputes was something greater. Moreover, the judgment led to a new definition of the relation of neutrals to belligerents. It is now settled that a neutral must use due diligence to stop expeditions fitted out in its ports against a friendly belligerent. So the American contention passed into the law of nations. The potency of this example is shown in the application of arbitration

to Venezuela, in the new treaty with England now pending in the Senate for a court of arbitration, and in the desire of France to enter into a similar agreement.

These are the principles which the United States has made part of the life and diplomacy of Europe. If her commanding benignity and influence are obscured for a while, they will be recognized in due time. Meanwhile, no American need blush for the part his own land has taken in promoting the civilization of mankind, and especially that of the proud, self-sufficient nations of Europe.

D. O. KELLOGG.

AGRICULTURE IN THE UNITED STATES

SECOND PAPER—STATISTICAL AND GENERAL

BY THE HON. J. STERLING MORTON, EX-SECRETARY OF AGRICULTURE

THE following paper continues the contribution begun in these pages last month on the subject of American Agriculture. The total area devoted to the cultivation of sugar-cane, not including sorghum, in 1889 was 274,975 acres; the total production of cane sugar was 301,284,395 pounds, and the total production of merchantable cane molasses, 25,409,228 gallons.

Sugar

Of this production, 292,124,050 pounds of sugar and 14,341,081 gallons of molasses were contributed by Louisiana. During the same year 80,777 tons of sorghum cane were sold for sugar-making (almost wholly in Kansas), and 24,235,219 gallons of sorghum molasses were made, chiefly in the Southern states, and those of the Mississippi, Missouri and Ohio valleys. There were also made in the same year 32,952,927 pounds of maple sugar and 2,258,376 gallons of maple syrup, more than three-fourths of the maple sugar being made in Vermont and New York, and more than one-half of the maple syrup in Ohio and New York. In 1894–95 the total production of cane sugar was no less than 729,392,561 pounds, of which 710,827,438 pounds were produced in Louisiana, and that of cane molasses 37,617,074 gallons, of which 28,334,513 gallons were the product of Louisiana.

Orchard Products

Like those of market-gardens, the products of orchards are difficult to ascertain in their entirety, in consequence of the large production on fractions of acres. The figures available, however, help us to realize the magnitude of American horticulture, even though there are extensive sections of the country in which fruit-culture is only just beginning to make its way. The last census reported a production of 143,105,689 bushels of apples, a fruit that was raised to a considerable extent in all sections, except in Florida, in the Northwest, and in the arid states and territories; 36,367,747 bushels of peaches, raised chiefly in the section of country extending from New York to Florida, and westward to the Mississippi River in its northern and to Texas in its southern portion, and reappearing in California, where its product has a great reputation; 3,064,375 bushels of pears, the production of which was, in the main, well distributed; 2,554,392 bushels of plums and prunes, nearly one half of which were grown in California; 1,476,719 bushels of cherries, the production of which was likewise fairly well apportioned, except in the arid region and the far Northwest; and 1,001,481 bushels of apricots, of which 970,941 bushels were grown in California.

These figures must be taken understandingly, for while the census year is known to have been a poor fruit year, there are no other figures with which the foregoing can be compared, and consequently there is no means of determining how far there was a departure from normal conditions in the different sections of the country. That the failure did not affect all sections alike, however, is well known, for in that memorable year hundreds of car-loads of apples grown on what were but recently treeless plains of Nebraska were shipped both to New York and to San Francisco. There are no figures available as to the production of small fruits, but it is known that the crop

is an enormous one and is gradually increasing. When many of the present residents of Nebraska and other trans-Missouri states first settled in those regions few believed that fruit of any kind could ever be successfully grown there. Now, however, successful orchards and fruit-gardens are found far in the interior of Kansas and Nebraska. In some counties apple trees are to be found on nearly every farm, and the importation of any variety of fruit, except such as are tropic or sub-tropic, will soon be a thing of the past. The growing of these last-mentioned products is necessarily restricted within narrow limits; so narrow, indeed, that it hardly seems possible that the crop of a single year, including nuts, could have been worth $14,116,227, as was that of 1889. Of this amount the orange represented $6,602,099, the pecan $1,616,577, the almond $1,525,110, the Madeira nut $1,256,958, the lemon $988,100, the pineapple $812,159, the olive $386,368, the fig $307,272, the banana $280,654, and the cocoanut $251,217.

Vineyards In 1889, 267,271 tons of grapes were sold for table use, 240,450 tons for wine-making, 41,166 tons were made into raisins, and 23,252 tons were used for other purposes, — a total of 1,144,278,000 pounds. The grape, raisin and wine industries of the United States represent a total invested capital of upwards of $155,000,000, and furnish employment to over 200,000 persons. To California have to be credited one half of the employees, more than one half of the invested capital, three-fifths of the wine production and the total production of raisins. The figures for New York, the state which stands next in rank, are comparatively small, except as to grapes sold for table use, which exceed 60,000 tons annually, or over 50 per cent. more than any other state. While in California the grapes are mainly European varieties, in almost every other part of the country they are improved varieties of native origin. Phylloxera, the scourge of European vineyards, has found its way into California and has done considerable injury. It forms the only serious menace to an industry that gives promise of becoming one of the most important in the country, in addition to effecting a most desirable reform, in the substitution of a pure, wholesome domestic wine for the sophisticated wines of foreign countries, for ardent spirits, and for malt liquors that contain no malt.

Minor Crops There are a number of products that do not fill any large place in the grand total of American agriculture, but which are, nevertheless, matters of no little importance within the geographical limits to which they are confined. Thus there were reported at the last census 128,590,934 pounds of rice, valued at $3,897,334, and grown on 161,312 acres, chiefly in Louisiana, South Carolina and Georgia; 39,171,270 pounds of hops, valued at $4,059,697, on 50,212 acres, of which 36,670 acres were in New York and 12,217 acres on the Pacific Coast; 9,378,903 bushels of pulse, grown in considerable proportions in every large section of country except New England, the Northwest and the north Pacific Coast; 38,557,429 pounds of broom-corn, grown on 93,425 acres of land, chiefly in the north central states, and particularly in Illinois and Kansas; 3,588,143 bushels of peanuts, valued at over $3,000,000, and representing an area of 203,946 acres, nearly one third having to be credited to Virginia and another third to Georgia and Tennessee; 1,793,369 tons of cotton-seed, valued at $15,852,525, sold by planters, mainly to oil-mills, and 5,700,239 bushels of grass and clover seed, upwards of 5,000,000 bushels of which were raised in the north central states. The same year florists sold plants to the value of $12,036,478, and cut-flowers to the value of $14,175,328. The products of nurseries are not reported, but the capital invested in the nursery business aggregates the large total of $52,425,670.

Live Stock *Ranges.* — Stock-raising has long constituted one of the most important interests in the United States. Not only have the American farms contained, in the main, larger numbers of domestic animals than those of almost any other country, but throughout that extensive region formerly included in Spanish America grazing has been a special occupation, under what is known as the ranch or range system. Under this system vast herds of cattle roamed at will over the public domain, their natural increase being distributed

among their different owners at an annual "round-up." The gradual settling up of the country, however, under the operation of the United States land laws, has slowly but surely pushed the range industry farther and farther westward, until it has almost crowded it out of existence. While perhaps there is as much stock in the old range country as ever there was, it is now made up mainly of small herds, grazing upon the lands of their owners. It is no rash venture into the field of speculation to affirm that it is the natural destiny of the range system to be completely swept out of existence by the advancing tide of permanent settlement.

Horses and Mules The estimated number of horses on farms and ranches on Jan. 1, 1896, was 15,124,057, valued at $500,140,186, — an average of $33.07 per head. The largest numbers were in Texas, Iowa and Illinois, each of which had between 1,100,000 and 1,200,000. Although the total number corresponds very closely with that reported at the last census, it must not be supposed that the industry has been stationary. In 1893 the number reported was nearly one million greater than in 1896, and so great has been the decline in values that in 1892 the horses reported, while not greatly in excess of the present number, were worth double the present value, or over one billion dollars. This great decline is admittedly due to the rapid extension of electric and cable car systems, and to the increased use of bicyles. So cheap are sound young horses in certain parts of the country that their exportation to countries in which horseflesh is used for food has been proposed.

It is worthy of note that from 1860 to 1890 the increase in the number of horses was far more than proportionate to the increase in population. The number of mules on Jan. 1, 1896 (2,278,946), has never been greatly exceeded. It is, however, a slightly smaller number than in any year since 1889, and the value of these animals, like that of horses, is gradually declining, the total being $103,204,457,— an average of $45.29 per head. Mules are used on farms most extensively in Texas, Missouri and the cotton states east of the Mississippi River. They are almost unknown as farm-animals in the New England states, and their numbers are small throughout the arid region.

Working Oxen The use of oxen as work-animals declined gradually from 117 for every 100 farms in 1850 to 24 for every 100 farms in 1880. Since that time the proportion has changed but slightly. While there has been some increase in the number, it has only kept pace with the increase in the number of farms. It is chiefly in the South that the ox finds favor as a work-animal, but the New England states contain about ten per cent. of the total number.

Milch Cows Under normal conditions the proportion of milch cows to population varies less than that of any other domestic animal or any important product of the soil. In five decennial censuses the number per 100 of the population varied only from 23.2 in 1870 to 27.5 in 1890, the proportion in 1890 being 26.4. Since that time there has been a slight decrease in the total, notwithstanding that the continued development of the dairy and creamery business has led to an increase in some of the most important states. The total value of milch cows on Jan. 1, 1896, was $363,955,545, — an average of $22.55 per head. New York, Iowa and Illinois have the largest number, each having upwards of one million head. It is a noteworthy fact that while New York, Pennsylvania and all the New England states had fewer farms and a smaller acreage in farms in 1890 than in 1880, every one of them showed an increase in the number of milch cows. The most remarkable increase within recent years has taken place in the states of the northern Mississippi valley, the chief centre of that enormous development of the dairy and creamery industry to which reference will be made elsewhere. In Iowa, for example, the last census found no fewer than 32 counties in which there were more than 1,000 milch cows for every 1,000 of population, Delaware County standing at the head of these and all other counties in the United States, with the high average of 1,630 to 1,000. A gratifying feature of the statistics of milch cows is the increase that has taken place in almost every section of the South. There is no country in the world in which the rival claims

to superiority of the different breeds of cattle have been more pertinaciously fought out than in the United States. At the Columbian Exposition at Chicago in 1893, a trial was instituted that was expected to settle the controversy for many years to come. The result of the competition was declared to be in favor of the Jerseys, but beyond this simple announcement no official report has been made. Whatever the reason for its non-appearance, it certainly is not creditable to those responsible for it.

Other Cattle There were reported to the Department of Agriculture on Jan. 1, 1896, 32,085,409 oxen and other cattle, as against 1,117,494 working-oxen and 33,734,128 other cattle reported by the census in 1890, — a decrease of nearly three million head, chiefly in the north central states. But notwithstanding this large decrease the cattle reported under this head in January, 1896, represented the large sum of $508,928,416. The largest number of neat cattle of all classes to every square mile of land surface at the last census was found in Iowa, where the average was 88.25. East of the Mississippi River, it is only in the states of Vermont and Florida that there are 1,000 or more neat cattle on farms for every 1,000 of the population. West of the Mississippi River, however, the proportions are almost entirely reversed, there being few states or territories west of that dividing line the number of whose neat cattle on farms is not largely in excess of population. In Wyoming there are 11 neat cattle on farms to each inhabitant, while the addition of those on the ranges in that state would increase the ratio to more than 15 to 1.

Quality Of the 51,363,562 neat cattle on farms in 1890, 506,060, or .99 per cent. were pure bred; 8,257,989, or 16.08 per cent. were grades, one half blood, or higher; and 42,599,523, or 82.93 per cent., were common or native, including grades of less than one half blood. The largest proportion of pure-bred cattle was found in the north Atlantic states, but the percentage of pure-bred and grades combined was greatest in the north central states. There were 13,015,775 neat cattle sold, living on or slaughtered from off farms in 1889, the proportions in the North being double those in the South. The highest percentage was in New Jersey. There were slaughtered for consumption on farms 1,294,237, the proportions varying in the different states from 1 to 5 per cent. The total number that died from disease and stress of weather (not including the large but unascertained percentage on ranges) was 2,028,070. In the main, the mortality was highest where the percentage of improved stock was lowest, and lowest where this was highest; the explanation being found chiefly in the difference in the degree of care bestowed upon the animals. The mortality in Florida exceeded that of many of the northwestern states, with their rigorous climate.

Contagious Diseases of Cattle Although that terrible scourge of the Eastern world, known as rinderpest, has never visited the American continent, the United States have sustained heavy losses in the past, through visitations of pleuro-pneumonia, foot-and-mouth disease and Texas fever. The country has, however, been entirely free from pleuro-pneumonia since 1892, and from foot-and-mouth disease since 1884. Not less than one fourth of the total area of the country is permanently infected with Texas fever, but the mortality within the infected district is not large, the losses occurring chiefly through the introduction of infected cattle into healthy districts.

Swine The number of swine has fluctuated to an extraordinary degree during the last ten years, and the number reported on January 1, 1896 (42,842,759), is the smallest since 1881, as is also the value of the same. The more recent decrease is ascribed in part to cholera and other diseases, and in part also to the failure of the corn crop of 1894. This fact furnishes another illustration of how misleading is the practice so frequently indulged in of using the figures for the last or some other single year as a fair measure of the extent and importance of a given industry. In the main, the raising of swine is of most importance in the states that produce the largest corn crops. In Iowa, for example, there were 4,324 swine for every 1,000 of the population at the last

census. No inconsiderable proportion of what may be described as the annual hog crop is consumed on the farms, the number slaughtered for such consumption in 1889 reaching a total of 15,426,329,—equivalent to nearly 27 per cent. of the total number on hand on June 1, 1890. In Virginia the proportion was over 71 per cent., while in the states in which swine are raised for shipment to the great stock-markets of the country the proportion was only from 7 to 10 per cent. Nearly ten million hogs died of disease in 1889. The largest number of deaths was reported from the states in which the industry has attained the largest dimensions, but the highest percentages of mortality were reported from the South.

Sheep and Wool

There has been some decrease in the number of sheep in the United States during the last two or three years, but not nearly so great a one as is commonly supposed. The estimated number of sheep on Jan. 1, 1896, was 38,298,783, as compared with a total of 40,876,312 enumerated by the census on June 1, 1890. While there has unquestionably been a large decrease in the Eastern and Middle states, there has been a very considerable increase in Montana, Wyoming, Colorado, New Mexico, Arizona, Nevada, Idaho, Washington and Oregon, the region to which the sheep industry of the country has been steadily gravitating for some years. Of the 35,935,364 sheep on farms in 1890, 16,725,415, or 46.54 per cent., were reported as merino, "fine" wool (one-half to full blood), and 7,435,471, or 20.69 per cent., as English breeds, "long" or medium wool (one half to full blood), leaving 11,774,478, or 32.77 per cent., enumerated under the category "all other." Massachusetts was the only state having a majority of its sheep mainly of English blood. Vermont had the highest percentage (91.01) of full-blooded and graded sheep. The percentage of lambs sold is highest in states convenient to the chief centres of population, New Jersey standing at the head, with 78.42 per cent. In Texas, on the other hand, only one out of seventeen was sold for consumption, while in Arizona there was practically no sale of lambs for market.

In the great sheep-growing states of the West large numbers of sheep are slaughtered for consumption on the farm, but in the East the number is insignificant. No fewer than 610,329 sheep were killed by dogs in 1889, chiefly in the Southern states. Arkansas lost 11 per cent. of its total number from this cause. Even in Connecticut and Massachusetts the losses were 3.99 and 5.57 per cent. respectively. On the other hand, the loss in North Dakota was less than one-half of one per cent., while in Montana only 22 sheep out of every 10,000 were killed by dogs. The farmers have the remedy in their own hands, and where, as in Montana, the sheep industry is one of great importance, effectual means are taken for the protection of the flocks. Nearly two and one half million sheep died from disease and stress of weather in 1889, the rate of mortality in the New England states being about twice as great as in Minnesota, North Dakota and Montana. The wool product of 1895 is estimated at 309,748,000 pounds, as compared with 298,057,384 pounds in 1894. The wool crop in this country is very difficult either to estimate or to ascertain by enumeration. The census occurs before the spring shearing is completed; fall shearing is practiced within certain sections of the country not clearly defined, and varying from time to time, and the average weight of fleece is subject to too great a variation to be easily estimated.

Dairy Product

The development of the dairy and creamery industries during the last ten years has certainly constituted one of the most notable features of American agriculture. Notwithstanding the great extension of the creamery system and the decline of our export trade, the production of butter on farms has increased even more rapidly than population, the production averaging 16.33 pounds *per capita* of the population in 1889, as compared with 15.5 pounds in 1879 and 13.33 pounds in 1869. While Vermont retains its reputation as a great dairy state, producing over eighty pounds of butter to every man, woman and child within its borders, it is to the northern Mississippi valley that we look for the principal butter production of the country. In that section the old dairy and the new creamery systems have flourished side by side, until now more than one half of the total butter production of

the country has to be credited to seven states. The total amount of butter made in 1889, was 1,205,508,384 pounds as compared with 806,672,071 pounds in 1879. The increase in the production of butter is not due alone to the increase in the number of cows, but in no small degree to improved methods of farming. This is shown in the increased production of butter per milch cow, from 64.83 pounds in 1879 to 72.98 pounds in 1889. This increase, moreover, is not confined to those sections of the country in which the creamery industry has been established, many Southern states that contain no creameries whatever showing a remarkable increase in butter production per milch cow.

Cheese While nearly six times as much butter is made on farms as in creameries, nearly thirteen times as much cheese is made in factories as on farms. But, notwithstanding the large increase in the factory system which this implies, the total production of cheese in the United States, *per capita*, was not only less in 1889 than in 1879, but even less than in 1849. In Wisconsin the total production averaged 33.7 pounds for each inhabitant, but for the entire country the average *per capita* was only 4.10 pounds, of which less than five ounces represented the production on farms. Our exports of cheese have shown a steady decline for some years, and there being no increase in the domestic consumption, production has fallen off relatively to population. The shrinkage of exports is alleged, not only by foreign importers, but by United States consuls abroad, to be due to the shipment of what is known commercially as "filled cheese," made from skim-milk, to which lard and other fats have been added. It is to be hoped that recent legislation will check this great evil, it being now imperative that filled cheese shall be sold only from original and plainly marked packages. There are no figures with which to compare the milk-production reported at the last census, but the total was 5,210,125,567 gallons,—an average of 83 gallons for each inhabitant, or 315 gallons per milch cow. The highest average milk-production was reported from the states having the highest per centage of pure-bred cattle. Vermont and Iowa had a production of over two hundred gallons for each inhabitant; in New Mexico it was less than five gallons *per capita*, and even in Louisiana it was under twelve, and in Florida under thirteen gallons for each inhabitant.

Poultry and Eggs The poultry and egg production of the country is so difficult to ascertain that no attempt is made to collect statistics relating to it, except in connection with the decennial census. The industry appears to have been the subject of a remarkable development between 1880 and 1890, the number of barnyard fowl having increased within that period from 102,272,135 to 258,871,125, other poultry from 23,235,187 to 26,738,315, and the total egg-production from 456,910,916 dozen to 819,722,916 dozen. Of the "other poultry," 10,754,060 were turkeys, 8,440,175 geese, and 7,544,080 ducks. There is a surprisingly small production of eggs (less than five per cent. of the whole) in the New England states, and considerably less than one per cent. in the arid region, even including Colorado. Ohio has the largest production of any single state, followed by Iowa, Illinois, Missouri and Pennsylvania, each of which produces over fifty million dozen.

Apiarian Products The total production of honey at the last census was 63,897,327 pounds, and of wax 1,166,588 pounds. Iowa led in the production of honey, followed by Illinois, Missouri and New York. In the production of merchantable wax North Carolina is far in the lead.

Irrigation The artificial application of water to promote the growth of crops is almost as ancient as agriculture itself,—agriculture, like the human race, having had its beginnings in the arid regions of the world. The irrigation-works of Egypt, Assyria, Babylonia and China antedate the historic period, and are known from their remains to have been on a colossal scale. At a later period came those of the Roman Empire, and still later those of Spain and Spanish America, the ruins of which still testify to their vast extent and substantial character. The most notable irrigation-works of our own time are those of British India, where many of the canals are of such dimensions as to

be regularly used for purposes of navigation. Most of them have been built by the Indian government to prevent the recurrence of those disastrous famines by which certain of the more arid but yet densely populated sections of the country have so often been visited in the past.

The benefits accruing from irrigation are not confined to the absorption of moisture by the plant itself. The soil is rendered more easily cultivable, and also more readily penetrable by the roots of the plants, and not only are the stores of plant-food contained in the soil rendered more available, but the water itself is not infrequently more or less heavily charged with the elements of plant-nutrition. The practice of irrigation in the extreme western parts of the United States may be said to have been inherited from our Spanish predecessors. Unlike other forms of development, its movement has been from west to east, until now it is resorted to, not merely in the regions where it is absolutely indispensable to the successful prosecution of agriculture, but also in that sub-humid border-land where the rainfall is too uncertain for dry farming to be practiced with any assurance of success, and to a limited extent within the humid region itself for crops whose highest development depends, not so much upon the amount of moisture they receive as upon the time and manner of its distribution.

The total number of acres reported by the census of 1890 as irrigated the preceding year was 3,631,381, of which 1,004,223 acres were in California, 890,735 acres in Colorado, and 66,965 acres in the sub-humid region, the remaining 1,668,458 acres being distributed through other sections of the arid region. The number of farms on which irrigation was practiced was 54,136, of which 13,732, or more than one fourth, were in California. The average size of such portions of farms as were actually irrigated was 67 acres, ranging from 27 acres in Utah to 192 acres in Nevada. In Utah and Nevada over 90 per cent. of the total number of farms were reported as irrigated; in New Mexico, Montana, Idaho and Wyoming, between 60 and 70 per cent.; and in California (taking the entire state as a unit, as in the preceding cases), not quite 26 per cent. The total estimated value of the 3,564,416 acres irrigated in the arid region was $296,850,000, an average of $83.28 per acre. The irrigated farms of California, with an average value of $150 per acre, represent more than one half of this total, the remaining averages ranging from $31.40 per acre in Wyoming to $84.25 per acre in Utah.

The total estimated value of the products of these irrigated lands for the year preceding the census was $53,057,000, or $14.89 per acre irrigated. Here, again, California is in the lead, with products valued at $19,080,000, an average of $19 for each acre irrigated. Utah has an average of $18.03 per acre, while Wyoming, whose crops consisted largely of forage, had an average of only $8.25 per acre. The first cost, including land, water rights, fences, and preparation for cultivation, of the irrigated areas, reported as worth $296,850,000, was declared by the farmers themselves to have been only $77,490,000, the increase in value amounting, therefore, to $219,360,000, or 283.08 per cent. The irrigation systems themselves were reported as having a value of $94,412,000, — an increase of $64,801,000, or 218.84 per cent. upon their cost. The average value of water rights (which represent the right or privilege of using water for irrigating purposes, either in a definite quantity or upon a prescribed area of land) varies, in the different states, from $8.69 per acre in Wyoming to $39.28 per acre in California, the average for the entire arid region being $26 per acre. There are fruit-growing districts in California where water rights have been sold at as high as $1,500 per miner's inch, or from $100 to $500 per acre, according to the quantity used on any given area of land. The duty of water, or the number of acres a given quantity of water is required to irrigate under ordinary circumstances, is usually from 100 to 200 acres per second-foot. It has, however, been known to be as low as 50 acres where water is abundant, and as high as 500 acres where it is very scarce.

There is great lack of uniformity in the methods by which water used for irrigation purposes is measured. In the two leading irrigation states of California and Colorado the miner's inch is chiefly used; but even this varies, 100 Colorado inches covering an acre of land to a depth of 5.2 feet in 24 hours, while the same number of California inches would cover a like area only to a depth

of 4 feet in the same time. An acre-foot, or the quantity required to cover an acre of ground to a depth of one foot, has the merit of definiteness, but its practical use is very limited. The quantity of water it represents is 43,560 cubic feet, or 325,851.4512 gallons, weighing 1,213 tons 2,113 pounds, at 2,240 pounds to the ton.

The unit of measurement that is really the most satisfactory, by reason of its definiteness, its relation to flowing water, and its applicability, either to large or relatively small quantities, is the second-foot, which is rapidly superseding the miner's inch. It is the quantity represented by a stream 1 foot wide and 1 foot deep flowing at the average rate of 1 foot per second. It is, accordingly, 1 cubic foot per second, 60 cubic feet per minute, 3,600 cubic feet per hour, and 86,400 cubic feet, or 646,316.928 gallons, per day of 24 hours. This last-mentioned quantity would cover 1 119-121, or say 2, acres to a depth of 1 foot. The second-foot is used by the United States government in the gauging of rivers and streams, and that its use in the measurement of water for irrigation will speedily become general admits of no doubt. Of the 8,097 artesian wells on farms, averaging 210.41 feet in depth, $245.58 in cost, and 54.43 gallons per minute in discharge, 3,930 were used for irrigating purposes, the total area thus irrigated being 51,896 acres, or an average of 13.21 acres per well. Of these, 2,060 were in California, 1,224 in Utah, and 345 in Colorado, leaving only 301 for the remainder of the arid region.

Relations of the Government and its Agricultural Stations to the Farmer

What the farmer cannot individually or by coöperation do for himself, the government may properly do for him. It therefore systematically observes, records, and, as far as may be, forecasts the weather; it ascertains, from time to time, the total production and disposition of the principal crops of the country, and the number and general condition of the different farm-animals; it maintains experts to investigate the nature of soils, the adaptability of plants to different environments, the diseases of the animal and vegetable kingdoms, and the ravages of destructive birds and insects. All these investigations, with others of a subordinate character, but directed to a similar end, are systematically and continuously carried on by the United States government at Washington and elsewhere, and some of them also by the different state agricultural experiment stations subsidized by Congress.

The results of these investigations, and of the work of the best scientists and experimentalists everywhere, are from time to time placed within the reach of the farmer, either free or at a merely nominal cost. So long, moreover, as the products of American agriculture continue to be so greatly in excess of the requirements of our own population, and their prices to be so largely governed by prices abroad, as has been the case throughout almost the entire history of the country, it is proper that the government should keep itself informed as to the condition of foreign markets and the nature and origin of the food-supplies of the world to the end that new or improved outlets may be found for the surplus products of the country. It may also strive to effect the removal of irksome restrictions imposed by foreign governments upon the importation of particular products. Here, however, its proper function in this regard comes to an end, and individual effort must once more be relied upon. The government cannot compel a purchaser to accept an inferior article or to pay a higher price than is fixed by the law of supply and demand, and it certainly is not its duty to make up to the producer for the deficiencies of an unprofitable market.

Present Trend of American Agriculture

Reference has been made in the foregoing pages to the fact that American agriculture has during the last few years been passing through a period of transition, or of readjustment to new conditions, due to the increasingly rapid westward movement of the agricultural centre of gravity and to the unprecedentedly low prices of the two principal money crops, wheat and cotton, for the surplus portions of which the American farmer and planter has been accustomed to receive from his foreign customers from $300,000,000 to $500,000,000 per annum. For the first time in its history, American agriculture is suffering somewhat seriously from the competition of other countries in the great markets of the world. That competition is not a

mere accident of the moment: it is a phase of the struggle for existence between nations; and so long as American farms are annually producing from $500,000,000 to $800,000,000 worth of products over and above what the American people themselves can consume, it will have to be reckoned with.

The purpose for which this article is written is such that its statements must be as true and have as practical an application ten years hence as to-day. It is in the full appreciation of this fact that the writer pronounces the secret of the future prosperity of American agriculture to lie chiefly in its adaptations to the world's needs. The ready adaptability of the American to new conditions is proverbial all the world over, and in nothing is it more conspicuous than in agriculture. When the farmers of New England found themselves unable to compete with the Northwest in what had been their principal agricultural products for five generations, they did not throw up their hands in despair, but sought out and applied themselves to what they could do best, with the result that they got larger returns on their capital and labor than ever before. Notwithstanding the unprecedentedly low prices of all kinds of farm produce, the farmers of Rhode Island increased the value of their products between 1879 and 1889 from $12.29 to $15.37 per acre, and the farmers of Massachusetts increased theirs from $11.35 to $16.94 per acre. If American farmers and exporters will study and cater to the tastes and requirements of their foreign customers, they need not fear being left in the race. A notable characteristic of the present time, and one that is scarcely likely to become an evil, is the tendency to a greater diversification of the products of the individual farm. This tendency is just as marked in the states that a few years ago were growing nothing but cotton as in those which were almost exclusively devoted to wheat. It is in strict accord with both the soundest principles and the most successful practice, and is a gratifying and encouraging sign of the times.

AMERICA TO-DAY—SOME SIGNS OF THE TIMES

WHILE political parties are wrangling over the currency, and doleful pessimists are wondering if "good times will ever come again," a little common sense reflection on the condition of our country at the present time may help us to understand the hard, cold facts, and enable us to adjust ourselves personally to them.

The United States are not "played out" as a money-making country, we may be quite certain. Vast mineral resources, vast tracts of land, vast possibilities of business enterprise are still waiting the efforts of steady, hard work. But all the "pay ore on the top of the ground has been raked off." Stock-watering railroad enterprises are exhausted. The opportunity to buy land for a small price, and become rich by holding it for a few years, has passed away forever. The days of eight and ten per cent. interest for money for starting new and quick-paying enterprises are already far behind us. In the natural development of a new country these things always do pass away, as in the whole course of history we have seen that they have passed away. Rome, enriched by conquest, one day discovered that she had conquered everybody worth plundering, and that thenceforth she must turn her attention to other things. When the Normans conquered England they took their pick of the land and formed for themselves large estates; but already the middle classes have driven them out; landed properties in England are comparatively valueless. And so in a smaller way in our own country: the railroad barons have grabbed all there is to grab, and all the little grabbers (that is, we common folk), have exhausted the temporary advantages which we had over the rest of the world.

More than this, the markets of Europe have been largely closed to our agricultural products. Russia and India have come in to compete with us in England; Germany has become a manufacturing nation; Africa has been opened and is to-day the world's El Dorado. Not many years ago the deficit in Europe had to be supplied from America, and America

alone. Now we must compete with all the world or go out of business. At present it seems as if we had decided to go out of business rather than "buckle down;" and in the meantime all our fine chances are being seized by others, and we are losing the great advantages we had secured, even more rapidly than we had gained them.

One is astonished to read of the vast sums given annually in England for charities, the vast sums that are saved and are available for any laudable public enterprise. The Indian famine fund will reach several million dollars, and the Prince of Wales has asked for a sum to endow the hospitals of London that will yield half a million dollars annually as interest, and England is cheerfully setting to work to raise the money, as if she expected to do it. In the matter of investments, the people of Manchester were asked for $75,000,000 for their ship-canal, though interest on the investment could not be expected for twenty-five or thirty years, and the people — the poor as well as the rich — furnished it out of their savings.

In America we managed to raise five millions to guarantee the expenses of the World's Fair at Chicago; but that was regarded as a first-rate advertising venture and we went into it as such. In America it would be simply impossible to raise such vast sums for charity, — mere charity,—as are annually procured in England. But it is not because we are less generous-minded, or large-spirited; it is simply because we feel that we can't afford it. We have got into the habit of living at a higher rate than we can comfortably manage, and it comes hard to reduce our expenses; we have set a higher value on our land than it was worth, and we are very loth to admit the facts and own that the land is not and never was worth what we had hoped it would be; we have always been hoping that an opportunity might arise for us to become millionaires like any one else, — why not? — and we have yet to realize that we never can hope for anything so reckless as that.

As a people we have grown reckless, almost criminally so. Nowhere in the world are there so many robberies and murders as in the United States to-day; nowhere do so large a proportion of men in bank positions and other high offices betray their trusts; nowhere in the world are all railroad enterprises so universally bankrupt as with us; and no people in the world are obliged to pay such high interest on their debts as we pay. Yet it is all our own fault; nobody deceived us; we considered ourselves as sharp as anybody, and acted with our eyes open.

Turbulence and discontent reign on every hand, and in every class of society; the restraint of a steady public opinion is nowhere felt, as it was in New England, for instance, not fifty years ago. Crimes are committed and nobody rebukes them; reckless folly is indulged, and no one cries "Halt!" We imagine that it is the currency that is deranged; we believed that if McKinley were elected all would be well; now we believe, or some of us do, that it should have been Bryan. The fact is, we are not looking at the real cause of the trouble. We are very slow to comprehend that the voluptuous days of sudden wealth are past, that the great good times we knew when the West was being opened are over and gone forever. We can no longer make fortunes out of railroad stock, for all the stock has been watered into bankruptcy; we can no longer purchase rich lands from the Indians for three cents an acre and sell them for three dollars, and in a few years see choice plots sold for thousands of dollars a foot. It is hard to adjust our minds to the new condition of things, to realize the fact that we must now come down to competing in the markets of the world for the world's legitimate business, that if we make fortunes we must to so by shrewd and patient labor.

But there may be advantages in this after all; when wealth is less attractive, perhaps some of our bright intellects will turn to literature, a thing we are in need of; our people will have time for culture, time to read and think. We may be able to turn our attention a little more earnestly toward the great problem of our self-government, and send statesmen to Congress instead of politicians; we will have time to watch our public men and hold them in check; time to suppress robbers and murderers; time to purify our city municipalities; time to save a little money for a rainy day.

The development of American journalism well represents the restless and reckless condition of the whole people. Daily papers have been started in New York during the past five or six years,

and without exception they have grown more sensational, until it is believed in journalistic circles that sensationalism alone has any opportunity to-day. The great personality, like Horace Greeley or the elder Bennett or McCullagh, has passed away, and instead we have millionaires ready to manufacture great newspapers out of fortunes, but unable to produce reliable or useful journals for the people. The papers of "solid" standing are all the remains of other times.

In the magazine world we find the same tendency. The great exploiter of great names builds up a fabulous circulation for his magazine; and Mr. Howells gives up writing fiction and criticism in order to turn out mildly amusing articles of the persons he has met, the story of his boyhood, a column of literary gossip. We have no literary critical weekly that will command respect abroad. Our Sunday newspapers and our voluminous magazines have everything under the sun *but* the thing one wishes to read or the article that will profit one by reading. If we consider it we shall see that our literature is as thin as are our railroad shares.

There are three classes of people in the United States, two of which are always in evidence. The two we are most likely to think of at first blush are the out-and-out foreigner, and the out-and-out American money-maker, with his violent methods, his superficial information, his breezy manner. The third class is so quiet that in these noisy days, when everybody has to shout in order to be heard at all, they have been almost forgotten. They come of the old England and New England, Dutch, Swedish, French and German stock, the old settlers whose brains and grit and love of liberty and devotion to justice made our country what it is. Some would have us believe that this class has died out; but it is not so. When any great occasion arises it is they who come to the front and preserve the country. To take a large instance, it was they who in the face of civil war preserved the Union; and to take a smaller and very recent instance, it was they who went to the polls and overthrew Tammany Hall three years ago. When the noise quiets down a little, it is these people who will restore prosperity, who will give us culture and good literature and sound criticism and honest journalism. They have been waiting their day; most of them have been employed in quietly accumulating comfortable fortunes. When they discover that the day of fortune-making is past, they will turn to literature-making, statesmen-making, and the high duty and beneficent work of self-civilizing.

SHERWIN CODY.

NANSEN'S EXPLORATION IN THE NORTH POLAR SEA

A CORNER of the veil which for so many centuries concealed from man the North-Polar area has at last been lifted by the Nansen-Sverdrup expedition.* All that we formerly knew of the vast realm of ice was its borderlands only; but the bold Norwegians have deeply penetrated into its heart, beyond the eighty-sixth degree of latitude, and the whole aspect of our hypothetical knowledge about these dreary regions is already modified. The vague name of a "North-Polar area" can be abandoned, and henceforward we can speak of a "North-Polar basin."

This basin is often referred to as if it were a circle, the centre of which is the North Pole; but it has not that circular shape. If we look at it, keeping the Greenwich meridian before us, we see, first, a broad channel, 900 miles wide, between Greenland and Norway, inclined to the north-east and leading from the Atlantic into the Arctic Ocean. From that wide entrance a long and wide gulf stretches, in a slightly crescent-shaped form, between the shores of Russia and Siberia on the right, and the North-American archipelagoes and Alaska on the left. It widens as it crosses the Pole, and it ends in a wide semi-circle, from which the Bering Strait is the only outlet. This narrow issue being however of little importance, we may neglect it, as well as several wide indentations of the two coasts, and we may say that the

*Abridged from a paper on "Recent Science," contributed by Prince Kropotkin, the Russian scientist, traveller and revolutionist, to the February (1896) issue of THE NINETEENTH CENTURY — ED.

Arctic basin is a broad, pear-shaped gulf, 2,500 miles long, 900 miles broad at its entrance, widening to 2,000 miles at its nearly blind Bering Strait end.

Warm water enters it, and cold water, laden with ice, issues from it — the former originating from, and the latter returning to, the Atlantic. The "rule of the road" for oceanic currents is to keep to the right, and the two currents obey it. The warm water of the Atlantic which is drifted northwards, and can be considered as a continuation of the Gulf Stream, flows past the coasts of Norway, and, before reaching North Cape, divides into two branches. One of them takes a northern course; it reaches the western coasts of Spitzbergen and flows along them as far as their north end, occasionally bringing to these coasts the glass balls that are used by Norwegian fishermen, as well as the big beans of the West Indian plant, *Entada gigalobium*, which are carried by the Gulf Stream across the Atlantic. The other branch bends eastwards. It flows past North Cape and for some distance along the coast of the Kola Peninsula; it crosses next the Barents's Sea and reaches the Russian island of Novaya Zemlya [Nova Zembla] to the frozen shores of which it also carries the same glass balls and the same West Indian beans. A sub-branch of the latter seems even to enter the Kara Sea in summer. Of course, the severe cold which reigns in those latitudes cools down the superficial layers of the warm current; but the thermometer still detects its presence, and its bluish waters are distinguishable, even at sight, from the greenish and cooler waters of the polar currents. And, inhospitable as these regions are, they would be still more inhospitable and inaccessible if the heat stored by water in lower latitudes were not carried by this current to the north. Owing to it, the Barents's Sea is free from ice for a few months every year, the western shores of Spitzbergen and Novaya Zemlya are of easy access, and, besides the lichens and the mosses which grow on these islands, the traveller finds there, in better protected nooks, a flora similar to the flora of the high Alps.

A considerable quantity of warm water thus enters the Arctic Gulf from the south. Consequently, a no less considerable quantity of cold water issues from it in the shape of a mighty ice current, nearly 300 miles wide, which also keeps the rule of the road and enters the North Atlantic between Spitzbergen and Greenland. Thence it flows southwards, along the eastern coast of Greenland, pressing itself to its crags and cliffs, and piling up ice-floes upon ice-floes as it forces its way through Danemark Strait (the passage left between Iceland and Greenland). When it has reached the southern extremity of Greenland (Cape Farewell) it also divides. A small branch of it bends round the cape and enters Baffin Bay, while the main body continues its southern course, meeting the Atlantic steamers as they approach the coasts of America. But the icebergs which these steamers meet with are only taken in by the mighty current as it flows past some East Greenland glaciers; in higher latitudes it consists only of thick floe-ice many years old, which grew thick as it was drifted in the Arctic Gulf.

It is this current which renders the eastern coast of Greenland so difficult of access. Many times whalers have been caught in it and drifted with it, and it nearly proved fatal to the crew of the second ship of the German expedition, the *Hansa*. The small schooner was firmly beset in ice in latitude 74°, and was drifted southwards. Eventually, she was crushed under the pressure of the thick ice-floes, and sank, while the brave crew, who took refuge on the floe-ice, were carried with it along the coast, until they succeeded, after a seven months' imprisonment, in escaping from it to their three boats. Making their way past Cape Farewell, they reached at last a Danish colony on the south-western extremity of Greenland; but their floe followed them, and the Eskimos subsequently found on it many valuable things which were left behind by the *Hansa* men.

Nansen and Sverdrup were also caught in the same current in 1888, as they were making their way in a boat to the coast, and although they were quite near to it when they left the whaler which had brought them thither, they were drifted with the ice for fourteen days southwards before they reached the land. One might almost think that the two friends conceived the bold plan of the *Fram* expedition during the drift, had not Nansen spoken of it before he undertook that journey.

One more feature of the broad Atlantic entrance into the Polar Gulf must be mentioned. In the midst of it — nearer to Greenland than to Europe — Iceland and Jan Mayen rise from the top of a submarine ridge which runs from the south-west to the north-east; further on, in the same direction, rise the Spitzbergen and the Franz Joseph archipelagoes; and this row of islands is an important line of demarcation; a deep trough lies to the north-west of it, while, with the exception of one submarine gulf, the sea is much shallower on our side of the islands;* so that Iceland, Jan Mayen, Spitzbergen, and Franz Joseph Land, as also the New Siberia Islands farther eastwards, can be considered as a sort of outer wall of Europe and Asia. Now, it is most remarkable, although the explanation of the fact is not quite clear, that the above-mentioned warm current keeps within that outer wall, while the cold polar current flows over the much deeper trough. And the same was found by Nansen farther to the east, throughout the whole length of the ice-current.

Such being the leading features of the North Polar Gulf, five different routes were tried to reach the North Pole: one through Smith Sound, along the western coast of Greenland; three, through the broad Atlantic entrance; and one through the Bering Strait: three *with* the warm current, and two *against* the cold current. For nearly eighty years all these routes have been tried in turn. Immense tracts of new lands were discovered; science was benefited to an almost unfathomable extent in nearly all its dominions through these expeditions; every step made in the ice-deserts was marked by acts of sublime heroism and abnegation. But the result of all these noble efforts was, that less and less hope was left of reaching in a near future the very heart of the immense yet unexplored tracts — the North Pole. Parry, in 1827, had pushed with his sledge and boat party to the latitude of 82° 45′ on the north of Spitzbergen; and fifty years later, after years of slow work along the western coast of Greenland, a latitude of 82° 26′ was attained on board ship, and sledge parties had penetrated some sixty miles ahead, to 83° 20′ (Markham) and 83° 24 (Lockwood), only to prove that further progress on the old line was impossible. Everywhere the mighty ice-current barred the way, and when the northern extremity of Greenland was reached, it was found to be blocked by a branch of the same current.

It is well known how the discovery of some relics of the shipwrecked *Jeannette*, which were found on floe-ice near the southern extremity of Greenland, suggested to Nansen the idea of trying a new route. De Long, on board the *Jeannette* had entered the Arctic basin, in 1879, through the Bering Strait, and he had sailed westwards to meet Nordenskjöld's *Vega*, but the *Jeannette* was soon caught in ice and was drifted with it for nearly two years — first in a circle round Wrangel's Land, and then north-westwards. She sank, on the 21st of June, 1881, to the north-east of the New Siberia Islands, and the crew, which went in boats to the mouth of the Lena, mostly perished. Two years later, various things belonging to the *Jeannette* were found in Greenland, and Nansen, after having traced their presumable route straight across the polar basin, proposed to follow that track. To build a strong ship which could resist the formidable side-pressures of the ice, and be lifted by them; to boldly enter the ice-current, and to be drifted by it across the unknown polar area — such was, as is well known, his plan. It is also known that this plan met with a strong opposition on behalf of most Arctic authorities — not only on account of its unprecedented audacity, but also because it was said to be based upon an unwarranted hypothesis. It must, however, be said that the hypothesis was, on the contrary, a quite sound, thoroughly scientific generalization, and it was received as such by a number of physical geographers.

About the genuineness of the *Jeannette* relics there could be no doubt, although even this point was contested in America. As to the route which they had followed, it was highly improbable, to begin with, that in two years they could have reached the southern extremity of Greenland on a circuitous route, coming from the west, or through the narrow Kennedy channel. On the contrary, it was only natural to

* On the north-west of this line the depths attain 1,800 and 1,900 fathoms; even in Danemark Strait they are 800 fathoms, while 1,370 fathoms were found to the north of Spitzbergen. On the south-east of it, with the exception of a deep gulf between Norway and Iceland, the depths are much smaller.

suppose that they had been carried with the great ice-current which sweeps along the east coast of Greenland — the current which drifted the *Hansa* and brought the ice-floe of the *Hansa* crew to the very spot where the *Jeannette* relics were found in 1883. As to the origin of that great ice-current, it was clearly indicated by the masses of Siberian trees, only recently torn off the places where they grew, which are drifted every year to the shores of Greenland.

The route followed by the Siberian drift-wood is marked on the map with an unmistakable distinctness. De Long saw such wood on the floes during the *Jeannette* drift; heaps of it are accumulated on the New Siberia Islands; other heaps are found on the northern extremity of Novaya Zemlya — Barents utilized them for building his house in 1596; and they are also found on the northern and eastern coasts of Spitzbergen. Mr. Murray saw the same drift-wood during his cruise between Iceland and Greenland, and Nansen saw it on ice-floes between Jan Mayen and Spitzbergen.

No route could be better indicated on a map, and already, in 1884, Professor Mohn, one of the best authorities in Arctic physical geography, wrote in the *Morgenblad* an article on the *Jeannette* relics, in which he distinctly advocated the view of their having crossed the polar basin. This article — Nansen says in his new fascinating book — suggested him the route to be taken in order to approach the Pole. Dr. John Murray and the German physical geographer, Professor Supan, both supported and confirmed this view; so also did Captain Wharton, of the British hydrographical service, and the Russian Admiral Makaroff, explorer of the Pacific. Altogether, the existence of this current was rendered so probable, since 1870, by the Scandinavian expeditions, that in 1871 the very existence of a then undiscovered land between Spitzbergen and Novaya Zemlya, "penetrating further north than the Spitzbergen" (now Franz Joseph Land), could be indicated in an Arctic report framed at the Russian Geographical Society, because — it was said in the Report — if no such land existed, the ice-current would reach North Cape and the Laponian coast and pile up there its ice — the warm current being too weak to prevent its invasion. Nay, it may interest Nansen to know that even the greatest authority on ocean currents, Maury, was with him. He foresaw the existence of the *Fram* current in 1868.

The idea of this current was thus growing in Arctic literature during the last five-and-twenty years, although nobody was bold enough to trust to it; and, in accepting it in its entirety — that is, in embodying the drift of the *Jeannette* and the East Greenland ice-drift in one mighty current — Nansen only proved the correctness of his scientific insight into the true characters of oceanic circulation. That this induction was quite correct, is now fully proved by the drift of the *Fram*. For three years this splendid little ship was drifted northwestwards and westwards, till it began to be drifted south, towards Greenland. Only at the end of each summer it was regularly carried for a short distance eastwards, under the influence of contrary winds. A formidable ice-current, almost as mighty, and of the same length as the Gulf Stream (from Florida to the coasts of these islands), a current having the same dominating influence in the life of our globe, has thus been proved to exist. Its width is enormous, and must attain at the least three hundred miles. Moreover, we now know positively that it follows a deep trough, 1,600 to 1,900 fathoms deep, which is a continuation of the above-mentioned deep trough of the North Atlantic. The polar basin is thus not the shallow depression which it was often supposed to be. It is a real continuation of the Atlantic, and its water is in as regular a circulation as the water of other oceans. Heat and cold are as regularly exchanged there as they are in the Atlantic or the Pacific.

We have learned, moreover, from the *Fram* what becomes of the warm current as it reaches higher latitudes. Under the 85th degree it is still felt, but it is found underneath the cold current. Its water still retains there a temperature of about 1° Fahr. above the freezing-point, and although it ought, accordingly, to flow *above* the cold current, its greater salinity renders it the denser of the two. It consequently flows in the abysses of the Arctic Ocean, and thus prevents the polar area from becoming a terrible reservoir of cold. A more equal distribution of temperature over the globe takes place in this way; and although the Norwe-

gian expedition did experience a very great cold, it never found under the 85th degree of latitude the same terrible winter as is experienced at Verkhoyansk, the pole of cold of the eastern hemisphere. As to the southern coasts of the Franz Joseph Archipelago, they fully experience the beneficial effects of the south-west winds and of the warmer Atlantic water which enters the Barents's Sea, as it now appears from Jackson's observations.

The wonderful journey of the *Fram* has made, at the same time, short work of all the hypotheses of wide lands extending towards the pole from its Eurasian side. The Franz Joseph Land is only an archipelago which, as is now proved by Jackson's boat journey, stretches farther westward towards Spitzbergen, but does not extend far northwards. Of course, many islands may still exist on the south of the track of the *Fram*. Thus, land was sighted again by Mr. Jackson to the north-west of Franz Joseph Land, and many islands may exist to the east of it; but none of them, we now know, protrudes beyond the 85th degree. As to what may lie to the north of the track of the *Fram* no one can say, and Nansen himself is the first to refrain from hasty generalizations. True, that the great depths discovered by the *Fram* seem to indicate the existence of a deep sea round the Pole. But we must not forget that the 3,000 fathoms' line passes within a hundred miles from Boston, and the 5,000 fathoms' line in the North Pacific runs within thirty miles from the Kurile Islands. An immense expanse of the North-Polar basin, 1,400 miles long and 1,000 miles wide, in which Greenland could easily be lodged, still remains even less known than the surface of Mars. It even appears probable, from the shape of the curve followed by the *Jeannette* and the *Fram*, as also from the eastern drift along the northern coasts of America, that some land may exist between the two currents. It must not be forgotten either that immense flocks of various species of birds were seen flying northwards, from the coasts of Siberia, not only at the mouth of the Lena, but also at the *Vega's* winter quarters, and that their destination could not be the small Wrangel Island, remarkably devoid of bird-life in the summer.

As to the magnetical and meteorological observations which were made on board the *Fram* for three consecutive years, with the aid of the best self-registering instruments, and the meteorological readings made by Nansen and Johansen as they made their daring dash towards the Pole and afterwards wintered in their fursack on Franz Joseph Land, they are simply invaluable. Mohn has truly remarked in his sketch of the scientific results of this expedition, that for three years the *Fram* was a first-class observatory located in the far north. And the value of these observations was still more enhanced by the fact of another Arctic observatory being at work, during the latter part of the same years, at Elmwood, the wintering-place of Jackson's expedition under the 80th degree of latitude, and in East Spitzbergen, where Ekroll wintered. Suffice it to say, that our magnetic maps, and maps of normal barometric pressure, remain mere guessings over large areas, simply from want of observations in high latitudes.

So long as the polar basin has not been explored over its length and width, men will attempt to penetrate into its mysteries. The Pole itself may be reached, but if seventeen degrees of latitude remain untrodden on its American side, there will be no lack of scientific volunteers ready to undergo the greatest privations in search of unknown lands and and seas. Arctic nature has so powerful an attraction for men endowed with poetical feeling, that he who has lived once amidst that dreary nature, so full of its peculiar charms, will long to return to it. — "Only to put my feet on that land — and to die," the old guide Yegheli said once to Baron Toll, as they were talking of that mysterious Sannikoff's land, which appears as a fairy vision amidst the glittering ice on the north of the New Siberia Islands. The methods of exploration of these wildernesses must, however, undergo a profound modification. The *Fram* expedition has proved that there is no land stretching as far as the North Pole, on our side of it, which would permit us slowly to progress along its coasts; and that between us and that spot flows the immense ice-current, 300 miles wide, as a floating girdle stretched round the Pole on more than one half of the circumference. Sverdrup and his ten companions, in order to reach Norway and to sail at once, if necessary, in search

of Nansen and Johansen, have certainly accomplished the almost inconceivable feat of warping and forcing their way across that current for 150 miles. But this represents only one half, or even less, of the total width of the ice-girdle which protects the Pole from human intruders.

True, there is the resource of a balloon. The Swedish aëronaut, S. Andrée, has proved that a balloon can be filled with gas in Spitzbergen and be kept, in spite of the storms, ready to take its flight as soon as the wind blows from a proper quarter. But last summer, although the balloon was kept in readiness for a fortnight, the wind, except for a few hours, never ceased to blow during that time from the north. And, after all, even under the best circumstances, a balloon flight would only be a reconnoitering excursion, which men would surely follow in ships, on sledges, or on snow shoes.

It becomes, however, more and more evident that in order to carry on that sort of exploration,—with no land to serve as a basis,—men endowed with a special scientific training, and a special physical training, implying a more than Eskimo endurance, will be required. And such men cannot be produced at will. A whole atmosphere of Arctic research and taste has to be created before the necessary men will come to the front; an atmosphere such as was created in this country by the exploits of Parry, the two Rosses, and those intrepid men who went in search of Franklin and of the seas he had left undiscovered; or such as has lately been created in Sweden and Norway for the exploration of the eastern hemisphere. It is not a mere accident that Nordenskjöld, the discoverer of the North-East Passage, and Nansen are Scandinavians; nor is it mere luck that made success, undimmed by losses of comrades, crown the expeditions of these two explorers. Arctic explorations, put on a firm scientific basis, and carried on year after year, for science's sake, had prepared their successes. For nearly forty consecutive years (since 1858), the Swedes have been sending out scientific expeditions to Spitzbergen and the adjoining seas, in order to carry on researches in all branches of science. Their museums are full of Arctic collections, their science of Arctic investigations, their literature of Arctic adventure. And when Nansen tells us how his heart was beating when, a boy of twenty-two, he went out for his first Arctic trip and occasionally saw the *Vega* afloat in the Arctic Sea, he only tells what thousands of Scandinavian hearts have felt.

It was only natural that Norwegian seal-hunters and whalers should have felt the effect of that atmosphere of Arctic enterprise. At the end of the sixties they began, accordingly, to roam about the Barents's Sea, and, in rapid succession they discovered new islands, circumnavigated Spitzbergen and Novaya Zemlya, discovered the house where Barents's wintered, and which had not been visited by man for nearly three hundred years. In 1870, they opened the Kara Sea for navigation, and mapped, sounded and explored that sea from end to end, pushing eastwards as far as the meridian of the Yenisei. Geographers wondered at these achievements of simple seal-hunters, who made discoveries and valuable measurements during their hunting expeditions. But these seal-hunters were backed by a great geographer, Mohn, the leader of the North-Atlantic Norwegian expedition, who guided them, supplied them with instruments, pointed out to them what was to be done. The result of these discoveries was that, in 1871, Mr. Leigh Smith chartered one of these seal-hunters, Captain Ulve, and thus inaugurated his epoch-making series of scientific explorations in the Barents's Sea; and in 1875 Nordenskjöld chartered a small Norwegian sloop, the *Prōven*, with Captain Isaksen and a Norwegian crew, and made his first famous voyage to the Yenisei. The North-Eastern Passage was thus opened, and next year Captain Wiggins followed, to continue thenceforth a series of regular journeys to the mouths of the Siberian rivers.

In 1878–79, Nordenskjöld, on board the *Vega*, accomplished a still greater feat, the circumnavigation of Asia, the aim of so many generations of Arctic explorers. Nay, the Austrian expedition of 1873–74, which resulted in the discovery of Franz Joseph Land, and the *Jeannette* expedition (to meet the *Vega*), were a direct outcome of the bold journeys of the Norwegian whalers, which journeys were themselves prepared by the Swedish scientific expeditions.

Besides, a new method of travelling on the ice, or rather an improvement upon

Parry's method and Schwatka's method of living and journeying with Eskimos, was worked out by Nordenskjöld, Peary, and Nansen, in their explorations of the Greenland inland ice. A light equipment, light sledges dragged by dogs, and men on snowshoes, ready to live the Eskimo life, or worse, was their method. Nordenskjöld inaugurated it in 1883, when his two Laps ran on snowshoes 100, or perhaps 150, miles over the inland ice. Two years later, Peary, equipped in the same light way, made his astounding journey across the same inland ice in North Greenland; and in 1888, Nansen and Sverdrup, with two more Norwegians and two Laps, accomplished the feat of crossing Greenland from east to west. During this journey and the subsequent wintering amidst the Eskimos, Nansen and Sverdrup must have learned a great deal, and must have realized the true conditions of success of every bold scheme: to work it out in all details, so far as prevision can go; and to rely, in their case, not upon a numerous "disciplined" crew, but on a small number of volunteers, all equally inspired with the same idea, and all equally ready to turn their hands to any work.

Now — true heroes of our century — Nansen and Johansen have shown what two men, lost in the ice wilderness, can do to live in that immense solitude, to explore it, and to make scientific observations of the highest value, even when they spend the winter in a rough semblance of a hut made of stones and skins, relying upon their rifles for food, heat, and light. Modern science may be proud of being able to enroll such men in its service. The work of Parry, Ross, Franklin, Kane, and of all that glorious phalanx who have conquered every mile of the Arctic archipelagoes and every league of the Arctic seas by their enthusiasm and energy, is not lost while it can inspire other men with like heroism.

P. KROPOTKIN.

STUDIES IN AMERICAN HISTORY:

THE REPUDIATION OF STATE DEBTS

IT is the proud boast of the United States that it has paid every obligation ever incurred by it promptly and in money demanded by its creditors. No other nation can show such a record. In bygone ages loans were made by sovereigns on the best terms possible, often under compulsion, and they were paid as the sovereign willed. Often they were not paid at all. The issuance of national bonds is of comparatively recent origin. Formerly the goldsmiths were the bankers, and they drove sharp bargains when they could knowing that the risks were great. During the Revolutionary War loans on behalf of this government were made abroad, but after the peace such was the impotence of Congress that it was hard to keep up the interest, and the holders of the bonds expected that some sort of composition would be made according to custom.

Hamilton's Success

But Alexander Hamilton not only secured the foreign and domestic debt of the nation but got Congress to assume all the debts of the States incurred for war purposes, and the interest was promptly paid and the bonds themselves were quickly paid off. Indeed so marvellous was this considered that our credit soon became as high as that of any nation, and when Napoleon sold Louisiana he was glad to take our bonds in payment, which were easily disposed of to advantage.

Early Credit

For fifty years not only the national credit but that of the States was high. The people were proud of their record, and deservedly so. During the War of 1812 there was difficulty, of course, but that is always the case under such circumstances, but the money raised for that war was paid promptly. Many bonds were sold below par, but the nation paid their face value in gold. The enormous sales of public lands soon made possible to extinguish the debt. Good credit is of the highest value to a nation, even more than to an individual. The latter's credit rests on his resources — his ability to pay, but in the case of a nation or state it depends also upon the willingness to pay, since there

is no way of collection by judicial process.

Good Credit an Essential Experience has shown that it is much better for a state to pay its debts even if there is a question as to their validity, than to attempt to get out of doing so on a technicality. Whenever it wishes to get more money, it must have a clean record in the past. There is no such thing as a "tolerably honest man," or state, or nation, any more than there is any such thing as a "tolerably virtuous woman." All should be above suspicion.

Every reader of Dickens has felt hurt at his constant references to the bad character of United States securities. Dickens was like a good many other foreigners, who have never been able to understand the difference between the federal and the state governments. The result has been that the nation has suffered in reputation by the acts of some of the states.

History of Repudiation Repudiation was first practiced about fifty years ago, and since that time nearly all of the Southern States have repudiated some of their state obligations, while only Minnesota and Michigan have done so in the North, but in these two instances the amounts were small, and the bonds were clearly open to question. This, however, was no reason for their acts. There were several reasons why the South has suffered in this respect. In the first place, the Southern people have always been poor financiers. Any man living, who was of age before the war, will say unhesitatingly that the great bane in the South was the tendency of every one to get into debt on his own account and to indorse notes for others. The system in the South was largely patriarchal. Crops were made once a year, and there were few planters, even among the wealthy, who did not borrow heavily against prospective profits.

Too Easy to Run in Debt It was easy to get into debt, but not so easy to pay up, and hundreds of men were bankrupted to pay notes which they indorsed out of friendship. The Southern people were not thrifty, and for this slavery was largely responsible. It is a well-known saying that no man can take care of a dollar unless he knows both sides of it. As the slaves did most of the work the whites had never learned that economy and thrift which were absolutely essential in New England. Moreover, slavery was a very expensive institution. When Hinton Rowan Helper published his book, entitled "The Impending Crisis," nearly forty years ago, it made a greater sensation in the South than "Uncle Tom's Cabin." It was easy enough for the slave-holders to say that Mrs. Stowe lied about slavery, but Helper was himself a Southern man familiar with slavery, and his book was an argument backed up by incontrovertible statistics, proving that slavery was an economic curse to the South, and that it would be a great deal better off if the slaves were freed and made to work for hire. This was exasperating, but it was true.

Expense of Slavery In most instances slaveholders refused to sell the increase of their slaves. They prided themselves on the families that grew up around them, as did the feudal lord in the Middle Ages. The negroes were not inclined to work except under stimulus, and at best they did far less than the free laborer, and the institution was all the time sapping the industrial foundations of the South. This made it very hard for them to get ready money for state improvements. Soon after the introduction of railways in this country there grew up an enormous desire in every part of the continent to build lines regardless of the prospects of traffic. The idea seemed to be that the mere building of a railway would bring prosperity. Also, after the failure of the United States Bank to get a recharter, nearly every state rushed madly into the chartering of banks, with permission to issue large amounts of currency on a very little specie. These banks were usually conducted on false principles by men ignorant of banking business.

Capital scarce in the South In the South it was particularly hard to get capital to build railways, because the people had no surplus funds to invest in them. As was just stated nearly every one was in debt or had his capital in land and slaves. If there had been New England thrift and free labor in the South from 1820 to 1860 that section would have become the richest in the whole world,

for it was almost the sole source of cotton supply, which brought good prices and yielded enormous profits when economically raised. The alternative of the states was to lend credit to railway, canal, turnpike, levee, and other companies either directly or through banks. This latter plan was the worst of all and brought about the first instance of repudiation.

Mississippi in the van

In 1838 the State of Mississippi passed a law authorizing the State to subscribe for $5,000,000 of stock in the Union Bank of Mississippi and to pay for it in its bonds. These were issued and sold through the United States Bank at Philadelphia. Some of them were sold abroad by this institution. The Union Bank was a failure from the start. The whole country was in a bad financial condition, and there were entirely too many banks already even in Mississippi. In a short time the State found that it would get nothing for the stock it had bought in the Union Bank, upon which it depended to pay the interest on the bonds, and in 1842 the legislature repudiated the whole issue, notwithstanding that the State Supreme Court had held the bonds valid. The repudiation was on the ground that the State had derived no benefit from the bonds and that, as a matter of fact, they had not been legally issued — and this in spite of the decision of its own courts. This made an immense sensation all over the country and in Europe. It hurt our credit and was, with subsequent repudiations, one of the reasons why it was so difficult to raise money abroad for the general government at the outbreak of the war. But Mississippi had another attack of repudiation. In 1832 the State gave $2,000,000 in bonds to the Planter's Bank which was for many years a paying institution. But when the bank failed the people refused to pay the bonds, and by a popular vote in 1852 the bonds were repudiated.

Florida's Bad Record

The next offender was Florida. This immense territory had a meagre population and it has grown slowly up to the present time. As a territory, in 1833 the legislature loaned its credit to the Union Bank of Florida to the extent of $3,000,000. This bank was a most remarkable affair, as stockholders could subscribe for the capital, give notes in payment, and put up slaves as collateral security; so the only real capital was derived from the sale of the territorial bonds. These were placed abroad and the bank began business in 1835. It hardly need be said that a bank conducted on this basis was destined to failure. Most of the capital was embarked in the construction of a railroad, but the road was never finished and went into bankruptcy and the State was called upon to pay interest on its bonds, which were the sole backing of the bank. Now there was every legal and moral obligation on the part of the territory to pay these bonds, but the people refused to do so, taking advantage of a technicality in their issue which they claimed invalidated them, and so they were repudiated. In addition there were $900,000 worth of bonds, for a trust company, and $4,000,000 with accrued interest issued to aid a railway, which the State refused to pay, making her total repudiation foot up over $8,000,000. It is true that it would have been a great burden to pay this debt with the State's limited resources, but this should have been thought of at first. Florida, like other states, played a game of chance in which she expected to participate in the winnings but not to pay the losses.

Alabama's Bad Case

Alabama's experience was somewhat similar, only "a good deal more so." This State, by aiding banks and railroad companies, had a large debt, but managed to pay interest on it all up to the Civil War, and paid some interest abroad during the early years of the war, but at last went into bankruptcy. After the war the State fell into the hands of the carpet baggers, and the legislation was of the wildest character. The State had finally aided railroads to the extent of $18,000,000 in its bonds, but much of the railway was never constructed, some of it was never completed so as to be operated, and of course the State was called on to pay. Now, by a Constitutional Amendment, none of the lately rebellious states were allowed to pay any of the debt caused by prosecuting the war against the Union. This example of repudiation was followed as to other classes of debt.

The Carpet Bag Government

In the long history of repudiation that follows there is this to be remembered. Nearly

all of the states were in control of men who had little or no interest in the commonwealths. The most revolting schemes of plunder were carried, though against the will of the real property owners in the states. Many of the acts appropriating money or authorizing bonds were illegal on their face. In many instances millions more were issued than were authorized, while in many more instances the state officials were in the steals and issued the bonds before the work had been performed. It is estimated that of the so-called "carpet-bag debt" of the Southern States not one-fourth was expended honestly and judiciously. The Southern people claimed with some show of justice that they could not be expected to pay the enormous debts piled upon them by millions when it was impossible to raise even the interest except by confiscation.

Effect of the War The war had destroyed about one-half of the property in the South; the repudiation of the Confederate debt had destroyed the resources of many. The industrial condition was upset by the emancipation of the slaves, many of whom had left the State and there was little or no money to be had for any purpose. After the war was over the Confederate currency became worthless, the State bank issues were prohibited and as the National currency had been issued in amounts supposed to be sufficient only for the loyal states where it was nearly all concentrated, there was great destitution and business was conducted under the most unfavorable conditions. As was said at the outset, the Southerners are poor financiers at best and that chaos resulted is not surprising. If the railroads contracted for had been built it would have been of some advantage, but these had not come up to expectations. In consequence, Alabama found itself unable, as well as unwilling, to pay enormous debts contracted by "foreigners" and it scaled down its debts to what it could afford to pay in its own estimation. About $7,000,000 was repudiated outright, and the railroad debt of over $18,000,000 was cut down to about $12,500,000. Including unpaid interest, Alabama repudiated some $15,000,000 in all.

North Carolina's Bitter Experience North Carolina had a bitter experience. Up to the breaking out of the war she had issued bonds to the amount of several millions to aid railroads and turnpikes, over $7,000,000 being outstanding in 1861, and under the same acts after the war enough was issued to make the total debt about $11,000,000. Then came a new raid on the state treasury by which over $16,000,000 were issued after 1868 in aid of railways, but these with one exception proved unprofitable, and the State made a composition with its creditors. In 1870 the total assessed valuation of property in the state was only $115,000,000, and the expense of government, including interest on all the bonds, was $2,500,000. To pay this would have required more than a two per cent. state tax at a time when money was hard to get on any terms. The final composition with the creditors was on a basis of about twenty-five cents on the dollar, including the debt previous to the war, which, however, got forty per cent. to fifteen per cent. for another class. The new debt was about $5,000,000, while nearly $13,000,000, with accrued interest amounting to several millions more, were repudiated.

South Carolina's Debauchery South Carolina's case is one of the hardest in the whole list. As this State was considered the worst offender in the war (its secession tendencies running back to 1832) the carpet baggers seemed to have taken especial delight in looting it. The legislatures, under the early reconstruction period, were largely composed of ignorant negroes, led by scheming, ambitious and unscrupulous men, some from the North, though not all of them were vicious by any means. The report of the debaucheries in this state fills a volume of nine hundred pages, and forms one of the saddest records in history. Money was spent like water for the most vicious or useless purposes. Legislators grew rich, feasted on viands of the costliest sort, drank champagne without stint, had their homes luxuriously furnished, all at the state expense, while the public moneys were voted for all sorts of schemes, and much of this was stolen or squandered through the connivance of state officials.

The debt previous to the war was small, and the war debt, of course, was

repudiated. The debauchery during the years succeeding the war was so great, and the over-issues so enormous, that the exact debt was never ascertained. From about $4,000,000 in 1867, the debt suddenly rose to an estimated amount, in 1870, of $30,000,000, for which the State had little to show. Of course this was an enormous sum, and much of it was not binding on the State either morally or legally. Then ensued a long period of litigation and attempts at compromises with the bondholders. A compromise at fifty cents on the dollar was agreed on, but before it was entirely carried out the State failed to pay interest on the new bonds, and this further complicated matters. Of the old debt $6,000,000 issued entirely without warrant of law were repudiated in toto. Finally the entire debt was fixed at about $7,000,000, which represented the scaling down of about $22,000,000 which had been declared wholly or partially legal. The total repudiation was over $17,000,000, including the bonds declared invalid.

Georgia's Experience The case of Georgia is somewhat peculiar. The State had little debt after the war debt had been declared incollectible, but the carpet baggers got promptly to work. The Constitution of 1868 forbade the State to purchase stock in any corporation, or to lend its credit to any corporation, unless it got a first lien on the property, and, in addition, that its bonds should at least be equalled by the holdings of private parties. This looked fair enough, but in execution there was little attention paid to these strict provisions. Bonds were granted to many railroads, and, in some cases, issued before the road was built, sometimes twice on the same mileage, and sometimes when there was no railroad at all. When the carpet baggers lost control, an investigation was made. It appeared that in very many instances the law had not been complied with, and the bonds in such cases were promptly repudiated. It is a little difficult to get at the total, but including interest it was about $10,000,000. The Georgians say this was not repudiation, as the debt never legally existed.

Louisiana's remarkable Debt Louisiana is in many respects the most remarkable example of all the States. Its record during reconstruction days was of the most unsavory kind, and it would be impossible to give more than a hint as to what took place. The necessity for levees along the Mississippi made a large debt necessary early in the history of the State. In 1840 the debt was over $23,000,000, including sums granted in aid of banks, railroads and levees, but some of these investments were good, for in 1861 the debt was only about $10,000,000, which was increased about $1,000,000 during the war for non-military purposes. The legislature ran riot for several years. Although the Constitution forbade a larger debt than $25,000,000, the schemes were so many that this was not enough to go round. In 1871, the total debt was found to be nearly $42,000,000. There is something cheerful about the way in which these legislators in the South piled up debts by the million. It was easy got and the payment was left to posterity. Such an enormous load of debt was impossible for a state to carry. In New Orleans the taxes rose to over five per cent., and the people demanded an investigation. Of the subsequent history of the State, up to 1876, much has been written, but there are few who understand it, so full is it of incident that it makes an honest man blush. There was a great deal of litigation over some of the debt, much was declared to be illegal, and several offers of compromise were made as to the rest. Finally a settlement was made, and the debt was fixed at $13,000,000, the total repudiated or scaled down as to principal and interest amounting to about $27,000,000. This is one of the banner states in the country in this respect.

Arkansas' Struggle with Debt Arkansas was another State that got into trouble before the war by aiding banks and levee companies, but did not begin repudiating until after the war. The carpet bag legislatures then got to work and piled up a large debt in aid of railroads, some of which was declared unconstitutional, and finally, in 1884, the people passed an amendment to the Constitution making it illegal to pay principal or interest on bonds issued to corporations. The total thus repudiated amounted to about $13,000,000, including accrued interest. Arkansas had few resources and the debts were beyond her ability to pay, but she made no discrimination between good,

bad, and indifferent, as all the investments turned out be poor.

Tennessee's Unsavory Record Tennessee got badly into debt helping corporations before the war. In 1861 the State debt was about $21,000,000. Ten years later it was about $43,000,000, the increase being due largely to the aid given to railroads. These roads got into trouble as usual, but the State made an arrangement by which the State bonds were partially exchanged by the companies for their own bonds, which reduced the indebtedness by 1873 to about $28,000,000. This was more than the State was able to carry, and refunding was resorted to, and for a time it seemed as if the State might get along without repudiation, but the panic of 1873 made matters worse and the State prepared to scale down its debt. There was litigation besides experimenting for some years, when someone discovered that some of the bonds had been illegally issued. This was rather late to make such a discovery, but it was claimed that over $11,000,000 were void. Many plans were proposed for reorganization, and curiously enough there was a spirit of chivalry that in every case provided that certain bonds held by Mrs. Polk, widow of the president, should not be touched. The debt issue got into politics and on this State issues were made for a long time. One effort was made to take care of the debt in a tolerably honest way but it failed. Finally the entire debt was scaled in different proportions from twenty-one to fifty per cent., the latter representing bonds issued to fund unpaid interest, as well as a large amount of bonds issued in aid of the railways. The total repudiation amounted to about $9,000,000, which was doing better than other states have done with smaller debts.

Readjustment in Virginia To give any idea of the situation in Virginia would be beyond the limits of this article. The Old Dominion had been in a bad financial condition for many years before the war. As the prosperity of the State declined, as the young men pushed West, the remaining people suffered under the load of debt, which was $33,000,000 in 1861. No state suffered more than Virginia during the war. It made the most heroic efforts in men and money for the Confederacy, and suffered from the continued devastation of both armies, so that at the close of the war its condition was deplorable in the extreme. It had lost the western counties out of which the State of West Virginia had been formed and which had suffered least during the war. It was out of the question to pay interest on the outstanding bonds, and the principal and interest in 1870 amounted to over $45,000,000. At this time an effort was made to financially rehabilitate the State. To begin with, one-third of the bonds were turned over to West Virginia to pay as its portion but the new state naturally refused to pay them, though there may have been a moral obligation to do so. States however do not hanker after paying debts of that kind, and the West Virginians claimed that the old state should pay them as its price for the experiment of secession.

Refunding Tried First The legislature provided for a refunding of principal and interest of the remaining two-thirds of the debt and made a manful effort to pay it, but had hardly got fairly started when the repudiationists got to work. The original refunding act allowed coupons of the bonds to be used in paying taxes. A subsequent act forbade this but was declared unconstitutional. This resulted in a great portion of the coupons being turned in in payment of taxes so that the State had little money to pay the expenses of government and the remainder of the interest. Then began a warfare on the original refunding act which lasted for many years and became the chief issue in the politics of the State and is still a factor. The Readjusters, so called because they proposed to make a new settlement of the debt, entered into politics and got control of the State. Senators Mahone and Riddleberger were elected on this issue and by reason of the close vote in the Senate Virginia's debt at one time was an important factor in National politics. Both of the Readjuster senators affiliated with the Republicans and gave that party a majority in the Senate at an important crisis.

Readjustment wins for a Time In 1882 the Readjusters passed a law declaring that as the State was not responsible for the interest on its debt during the war or reconstruction periods, the debt was too

large. They figured it out at about $20,000,000 instead of $31,000,000. Thus $11,000,000 more were repudiated. The Readjusters also passed a law which in effect prevented the use of coupons for paying taxes and it was sustained by the Supreme Court of the United States sufficiently for the Readjusters' purposes. Coupons could only be used under circumstances that seldom occurred and involved litigation that made them too expensive to be commonly used. This was a clear fraud on the bondholders, and finally the Readjusters were driven from power. A new Act was passed which in part redeemed the credit of the State by making partial amends for the Readjuster repudiation. New long-time, low interest bonds were issued which if paid will in part redeem the honor of the State. It is hard to figure out just how much the State has repudiated outside the sum that West Virginia was asked to pay but declined, but it is in the neighborhood of $20,000,000.

Michigan and Minnesota

The two Northern States that have repudiated are Minnesota and Michigan, but perhaps only technically so and for small amounts. Minnesota aided a railway to the extent of over $2,000,000 early in its history, and of course the railroad failed. Then the State refused to pay the bonds for a long time, and finally did pay fifty cents on the dollar, it being alleged that this was all that anyone ever paid for them, and that in so doing it paid all that honor demanded, as the State got little benefit from their issue. Michigan's case was much simpler. Some of her bonds issued long ago were put in the hands of a banking house to sell. A few were sold, but before the State got payment the bank failed and the State got none of the money. A few of these bonds were sold abroad, and the State refused to pay them, on the ground that they had received nothing for them. This was straining a point, and one can well believe that it would have been much better to have maintained an untarnished credit by paying the innocent holders of the State's bonds.

Complaints of the South

The South has bitterly complained that most of its woes were due to the carpet bag governments. This is largely true, but it does not excuse the States for all their repudiation. Not all the debts were piled up by carpet baggers, and natives were in many instances responsible for some of the steals. The South should remember that for the first time in history after a civil war the victorious party did not put to death the leaders of the revolt. Germany in 1871 made France pay an indemnity of $1,000,000,000. The punishment to the South came in another way, though it was of no credit to any concerned in it. The total repudiation was about $150,000,000, which was after all small compared with what France really did pay.

One result of these repudiations has been that every State Constitution has provisions looking toward a prevention of such trouble in the future. In nearly all there are provisions against lending the credit or making appropriations to corporations, and in nearly all the State debt is limited to a small amount and for specific purposes. In Pennsylvania the State can create no debt whatever for any purpose other than military, to repel an armed invasion. This proves very embarrassing just now, for the capitol has been burned to the ground and no debt can be created to build a new one. As the ordinary revenues are not larger than the demands of the State, it has been found necessary to devise new taxes in order to get the money to erect a new building. In this case it would be legitimate to issue bonds for the purpose, but people are well satisfied to go without a debt and put up a building on the pay-as-you-go plan.

Credit is Essential

While the States have had a very unfortunate history with their debt, the lessons have been learned probably for all time, and it is to be hoped that nothing will ever again occur to shake our credit. The people in the last election in effect decided to pay in gold the national bonds which could legally be paid in silver at half the price. It is better to be jealous of one's credit either as a man, a corporation, or a State, than to avoid payment by technicalities. A reputation (national or individual) once broken may possibly be repaired, but "the world will always keep its eyes on the spot where the crack was."

JOSEPH M. ROGERS.

OUR COAST DEFENSES, AND THE UNITED STATES COAST SURVEY

BY MAJOR-GENERAL NELSON A. MILES

THE coast of the United States may, for convenience, be divided into four regions: 1. The Lake coast, having thirty-seven cities, with an aggregate population of 2,525,893, and an aggregate wealth of $2,624,408,022; 2. The Atlantic coast, with seventy-five cities, population 6,640,532, and wealth $6,899,512,748; 3. The Gulf Coast, with eight cities, population 354,182, wealth $367,995,098; 4. The Pacific coast, eleven cities, population 527,223, wealth $547,784,698 — a total of 131 cities, with a population of over 10,000,000, and aggregate wealth exceeding in value $10,000,000,000.

The principal seaport cities have had for many years no adequate means of defense. In 1886 the Board of Fortifications reported 2,020 sea-coast guns on hand, available for use, exclusive of sea-coast mortars, all of which were essential for the protection of torpedo-lines and the defense of the major and minor ports. The number of men necessary to arm them in time of war was estimated at 52,236, or about 2,500 in time of peace. But many of these guns were obsolete and of little value, and not a few of the batteries could not stop a single first-class ship-of-war, much less a fleet equipped with modern appliances.

The fact that the entire system of warfare had changed within a generation; that European countries had increased their navies in recent years; that the ports of the United States were no longer able to resist the invasion of a foreign foe; and that in case of attack great loss of life and property would ensue, to say nothing of possible occupancy by the enemy, the consequent destruction of commercial interests and the payment of an indemnity — all these aroused the nation to a sense of its insecurity and to the necessity of multiplying and strengthening its coast defenses.

Accordingly in 1885, induced by urgent representations on the condition of the coast defenses from civilians and military and naval officers, Congress directed President Cleveland to appoint a board to investigate and report measures to place the seaboard in a state of defense. This board — known as the Endicott or Fortifications Board — reported in 1886. The report thoroughly covered the ground of inquiry, and its recommendations named the ports requiring fortifications, the nature of the needed works, the number and character of the guns and mortars required, and the probable cost of all. The estimates submitted included equipment for twenty-seven ports, and called for permanent works, to be armed with 677 high-power guns and 824 modern mortars. The amount of money required was $97,782,800, exclusive of $28,595,000 for floating batteries; $21,500,000 was to be made available in 1886, and thereafter the annual appropriations were to be $9,000,000. This report still stands as the projected system of the coast defenses of the United States.

The original plan looked to the completion of the work by the year 1896. But the actual appropriation for armaments and emplacements since the report of the board up to 1896 was only $10,631,000. The average annual appropriation for guns and emplacements has been less than $1,500,000, instead of $9,000,000, as called for in the report. The work has thus been conducted at about one-seventh the rate proposed. Referring to the matter, the Secretary of War in a recent report observes, that "If future appropriations for the manufacture of guns, mortars and carriages be no larger than the average authorized for the purpose since 1888, it will require twenty-two years more to supply the armament of the eighteen important ports for which the projects complete are approved. If the appropriations for the engineer work are to continue at the rate of the annual appropriations since 1890, it will require seventy years to complete the emplacements and platforms for armament for the ports referred to."

The Endicott board reported as needed, in addition to the 2,020 guns then on hand, 1,305 guns of modern construction.

But the last report of the Secretary of War shows that partial provision has been made for forty-two gun-emplacements out of 448 needed, and sixty-four mortar-emplacements out of 952 required. The report expresses the expectation that, by July, 1896, there will be 1,371 eight and twelve-inch guns and fifty-five gun carriages and twenty-four emplacements ready for use, and that twenty-four guns out of 448 required will be in position and available for defense. .

Since the organization of the Endicott board, Congress has appropriated over one hundred and ten million dollars for the building of the navy, and a little more than ten million dollars for coast defense. The recent port-defense vessels are: The *Amphitrite*, 3,990 tons, with four 10-inch, two 4-inch and two 6-pounder quick-firing guns; the *Miantonomoh*, 3,990 tons, and the *Terror*, 3,900 tons, each with four 10-inch and two 6-pounder quick-firing guns; the *Puritan*, 6,160 tons, with four 12-inch, six 4-inch and two 6-pounder quick-firing guns; the ram *Katahdin*, 2,183 tons, with four 6-pounder quick-firing guns. To which may be added the *Monadnock*, 3,900 tons, with four 10-inch, two 4-inch and two 6-pounder quick-firing guns; and the *Monterey*, 4,048 tons, with two 12-inch, two 10-inch and six 6-pounder quick-firing guns. In 1896, there was a total of nineteen ships for coast defense.

The settled policy of the United States is evidently to make its ports and harbors impregnable and its naval power effective. The boundless capital in property that would be destroyed by bombardment, with its attendant loss of life, the material interests of the whole nation, and the patriotism of its people, urge the completion of the work as early as practicable.

NELSON A. MILES.

COAST SURVEY OF THE UNITED STATES.

In 1807, upon the recommendation of President Jefferson, Congress passed an act authorizing the President to cause a survey of the coast of the United States to be made, and accurate charts to be constructed of the entire coast-line; but it was not till 1817 that the work was actually begun. In that year a commencement was made near the harbor of New York, under the direction of Prof. F. R. Hassler, a native of Switzerland, who had gained experience in similar works abroad. Owing to the failure of Congress to make suitable appropriations, the work was prosecuted only at intervals between 1817 and 1832, no general survey being attempted, while the detached surveys were limited to the most elementary information.

In 1832 Congress empowered Professor Hassler to employ such astronomers as he thought advisable to assist the military and naval officers in the prosecution of the work, and provided an appropriation adequate to the requirements of the service. From that date to the present time the survey of the coast has been in steady and active progress. Professor Hassler continued in charge of the work until 1843. His successor was Prof. A. D. Bache, great-grandson of Franklin. The latter was succeeded by Professor Benjamin Peirce, the eminent astronomer. Since Peirce's day there have been five holders of the office, the present incumbent being William W. Duffield, of Michigan.

Some estimate of the magnitude of the work of the coast survey may be formed from the fact that the American coast-line, exclusive of Alaska, reaches a total of 7,060 miles, while the shore-line, following the indentations of the numerous bays, etc., reaches a total of 29,375 miles. The work combines three important operations: 1. The geodetic survey, which accurately determines the geographical position of various points along the coast by astronomical and trigonometrical methods; 2. A topographical survey, which delineates the coast-line and the characteristic features of the land; and 3. A hydrographic or nautical survey of the channels, shoals and approaches to the shore, including observations of currents and tides.

As fast as the work is completed, charts are published in sheets for the use of mariners, which can be obtained at a low price at the principal seaports. The list of publications embraces a main series of charts, giving a continuous representation of the entire coast on a scale of 1 : 80,000, or about three quarters of an inch to the mile, and exhibiting all the natural and artificial features of the shore, together with the depth of water and configuration of the sea-bottom, channels, shoals, etc. There are also a series of charts on a smaller scale of 1 : 400,000, known as "off-shore charts,"

for the use of mariners in approaching the coast; and a series of still more general charts on a scale of 1 : 1,200,000 for the use of mariners in navigating between distant points. In addition to these, a large number of charts of separate harbors, bays, anchorages, rivers, passages and dangers, on scales varying from 1 : 5,000, to 1 : 60,000, are published.

Although the survey of the coast proper is now nearly completed, there still remains plenty of work to occupy the force. In 1871 Congress provided for conducting a chain of triangulation across the continent to form a geodetic connection between the Atlantic and Pacific coasts, and for the execution of the trigonometrical survey of such States as should make a requisite provision for the topographical and geological survey of their domain. This work is now being actively prosecuted, and the plan of a general geodetic survey of the entire country bids fair to be realized.

STUDIES IN MODERN LITERATURE:

CANADIAN WRITERS AND THEIR WORK

ALTHOUGH the Dominion of Canada, in age, physical characteristics, race and spirit, has had much in common with her great neighbor the United States, she has as yet produced no national literature. Writers she has had in abundance, some of them of rare excellence, but she has had no great, distinctively Canadian, writer, no sharply defined literary movement, no northern school of poets or novelists or historians. Amid a great wealth of literary material, surrounded by the grandest of natural scenery, and looking back over a history full of romantic episode, especially in the early French period, the Canadian has had little encouragement for literary effort. He has never had the inspiration of a firmly united, independent fatherland. "A dependency can never be a nation;" and it is an axiom that literature can flourish only where the idea of independent nationality is firmly established.

In addition to this element of dependence there have been other serious impediments in the way of literary development. Despite the fact that the provinces are united in a confederacy under one executive and legislative head, much as are the United States, there is no real centralization. The Dominion lies in four widely separated sections: the maritime provinces; old Canada, including Quebec and Ontario; the prairie region, including Manitoba and the northwest territories; and British Columbia. While each of these communicates freely with the sections of the United States directly south of it, there is, owing to natural barriers, but little communication between the contiguous sections. The territory west of Ontario is as yet in its formative period, and is still too new for literary achievement. A history of Canadian literature must confine itself to the St. Lawrence valley and to the maritime provinces. But even within this restricted area there are almost impassable barriers to literary development.

The provinces of Quebec and Ontario are separated by an antagonism both of race and of religion. Quebec is literally "a new France in the heart of English Canada," with a spirit, a religion, a language and a literature wholly unlike anything else in America. Its outlook, both in thought and literature, is toward France. Thus the Canadian writer can expect no audience of his countrymen outside of his own province. The book published in Toronto seldom reaches the maritime provinces, since Quebec lies as a barrier between, and there is no demand for it in the new northwest. These conditions have made it hitherto impossible for the literary magazine, that most important factor in literary development, to flourish. All Canadian writers, who have become at all known outside the limits of their own province, have been compelled to seek publishers in the United States, in England, or in France.

Canada is as yet in her song period. Poetry is not widely popular among the masses of Canadian readers, yet from the first the bulk and the best of the literary product has been in verse. Aside from a few narratives, chiefly valuable as

sources of history, the Dominion is known to the literary world wholly from its lyrics. The earliest voices came naturally from the older sections about Quebec and the Lower St. Lawrence,—simple chansons sung by the French peasantry, lullabies and nonsense verses, rollicking boat-songs sung by hardy *voyageurs* and raftsmen, tender ballads of the *ancienne mère-patrie*, rippling love ditties, and wild drinking-choruses. The most popular of all these old chansons is *À la Claire Fontaine.* "All the people in Canada sing the *Claire Fontaine.* One is not a French-Canadian without that."

Aside from a few historical narratives, the French have produced no valuable literary work outside the realm of song. There have been a few true poets, but no great original singer. All of them have kept carefully in tune with the voices of old France. The earlier poets, like Turcotte, Barthe, Derome and Garneau, were simply the Canadian exponents of the French school of 1830. The later group has been more national in its themes and its tones, and almost all of its members have belonged to the romantic school. Among its best representatives may be mentioned Octave Crémazie, Pierre Chauveau, Pamphile Le May, Louis Honoré Fréchette and Benjamin Sulte. Fréchette, who is easily the leading singer of French Canada, has taken his themes almost wholly from the national history. His sweet lyrics, published in collections, bearing such poetical titles as *Les Fleurs Boréales* and *Les Oiseaux de Neige*, won for him, in 1880, the laurel crown of the French Academy.

English-Canadian literature is of comparatively recent date. Commencing with Mackenzie's narrative of his travels in British America, published in 1802, there have been published, from time to time, many native books dealing with the exploration and the history of the Northwest and of Lower Canada. The stormy times preceding the union of 1840–41 called forth not a few trenchant political brochures, and many valuable studies of important periods in Canadian history have been made from time to time, but native works of a purely literary nature were almost unknown until after the Confederation of 1867. Following this union, which had in it the promise of a united fatherland, there came a sudden outburst of literary activity, especially in the region known as Upper Canada, now Ontario. The first true English-speaking poet was Charles Heavysege, who published, in 1857, at Montreal, "Saul" a drama, "one of the most remarkable English poems ever written out of Great Britain." Eight years later he published "Jepthah's Daughter," a work full of imagination and feeling. Heavysege was not a native of Canada, and is Canadian neither in spirit nor in theme.

It remained for Charles Sangster, a true poet of nature, to sing the first genuine songs in English of the Canadian woods and fields, of "the St. Lawrence and the Saguenay." He was followed closely by Alexander McLachlan, "The Canadian Burns," whose "Idylls of the Dominion" are fragrant with odors of forest and meadow, and musical with the heart-songs of the people. In the great choir of later singers a more extended mention should be given to Charles Mair, "The Northwest Poet," author of a drama entitled "Tecumseh," and the singer of wild life on the prairie and the war-path; to Isabella V. Crawford, who died too early to reap the rich reward which her strong powers should have brought her; to E. Pauline Johnson, a young poet of rare promise, already the strongest singer that the Indian race has produced; to Archibald Lampman, who brings to his pictures of northern woods and pastures a rare classical spirit and culture; to K. Seymour McLean; to Ethelwyn Wetherald; to "Seranus" (S. F. Harrison); to Duncan Campbell Scott; and to many another. Another English-speaking poet worthy of mention is John Reade of Montreal, whose "Merlin and Other Poems" has the Tennysonian grace and sweetness, combined with a striking originality.

Of the maritime provinces, New Brunswick has become of late the literary centre. The little school of poets headed by Charles G. D. Roberts, Bliss Carman, Barry Stratton and William W. Campbell is one of the most promising groups in literary America. Roberts, with his sweet, perfect lyrics, full of pictures of the marshes and uplands of his native coast, is now the unchallenged leader of northern song. His best work is in his "Orion and Other Poems" (1880) and "In Divers Tones," books distinctively

Canadian in spirit and scene. The leading singer of Nova Scotia is perhaps Arthur J. Lockhart, while Prince Edward Island has for its laureate John Hunter-Duvar, the author of many graceful lyrics of island life and scenes.

Notwithstanding the fact that the Dominion with its varied population and conditions, has in its history, its social life and its scenery a rich mine of materials for fiction, there has as yet been produced no Canadian novel of the first rank. James De Mille, a native of New Brunswick, and author of the widely popular "Dodge Club in Italy," wrote little that was distinctly Canadian. Five or six names exhaust the list of writers who have written novels that are read outside of Canada. The leading novelist of French Quebec is M. Joseph Marmette, whose historical romances, "L'Intendant Bigot" and "Le Chevalier de Mornac" have found considerable favor in France. Among other French historical novels may be mentioned De Gaspé's "Les Anciens Canadiens," and Bourassa's "Jacques et Marie," a story treating of the expulsion of the Acadians. Of English novelists, only the names of Major Richardson, Miss Machar ("Fidelis"), William Kirby, John Lesperance, Gilbert Parker, and the joint authors of "An Algonquin Maiden" need be mentioned.

In the field of historical literature Canada has produced several notable names, chief among which are those of Judge Haliburton, better known under his humorous sobriquet of "Sam Slick," whose "Historical and Statistical Account of Nova Scotia" is a standard work; James Hannay, whose "History of Acadia" has taken a leading place, and Goldwin Smith, who, with many works, both historical and political, has made himself the leading prose writer of Canada.

Dr. William Kingsford is now writing at considerable length a "History of Canada," which is a painstaking and detailed narrative, though lacking in the attractive qualities of literary style. Eight volumes of the work have appeared, which bring the annals down the War of 1812. Another work, useful for consultation, and of which a new edition has recently been published, is MacMullen's "History of Canada." It is written from the Liberal standpoint. Dent's "Canadian Rebellion," the same writer's "Last Forty Years;" Goldwin Smith's "Canada and the Canadian Question;" Parkin's "The Great Dominion;" Grant's "Picturesque Canada;" and Mercer Adam's "The Canadian Northwest," are worthy additions to historic literature. Biography has also made additions of more or less merit to native letters, the more notable works dealing with political memoirs and reminiscences. Science has also enlisted its writers, as have education, law and religion.

The future of Canadian literature is hard to predict. It depends on the future history of the Dominion itself. The weakness of its past has come from its sense of dependence, its lack of self-reliance, its want of centralization. With a firmly united, independent government there would come at once an outburst of literary activity, for which the literature of the past has been but the preparation, and Canadian literature would soon take an established place beside that of the United States. F. L. PATTEE.

"THE LAND OF THE DOLLAR" *

IT is always with more or less amused interest that one opens an English book of travel in this country. The impression which the Englishman, and indeed the foreigner generally, gets of the United States, its institutions and people, from a brief sojourn on this side the Atlantic and a hurried tour through its principal sections, East and West, North and South, is usually a thin and far from fair one; while, as a rule, very perfunctory is the subsequent description set out in cold print in a more or less pretentious volume. We are all familiar with the character of these globe-trotting tours and "jottings by the way," and not many of them is it worth while to open, if one looks for acute or even sensible comment, or anything in the nature of clever sketching and philosophical observation.

It is the exception to this sort of thing

* "The Land of the Dollar," by G. W. Steevens, London and Edinburgh: William Blackwood & Sons.

that proves the rule, and occasionally, and at rare intervals, the rule is broken by the appearance of a work which is quite out of the ordinary. Such a book has just been issued in England, by a new and clever writer, whose practised eye and hand has placed his work in a category by itself, and won for his treatment of a rather hackneyed subject the approval of fair-minded people and the praise of competent critics. The book we refer to—"The Land of the Dollar" (not a very original title, certainly)—is by a young English journalist, Mr. George W. Steevens, who, we believe, is a special correspondent of the London *Daily Mail*. Mr. Steevens, it seems, paid the United States a visit last year, when we were in the throes of the Presidential election, and the work referred to is the result of a hasty tour across the Continent, with momentary halts in its chief centres. The tourist, in the present case, is evidently a man of ideas, a skilled impressionist, and withal a friendly but dispassionate critic. His chief merit, however, is a rather unusual power of graphic writing, with a striking gift of seeing things through fresh eyes, and a mind alert to novel impressions and unfamiliar characteristics. The result is a breezy book, full of clever comment, and with the quality of eliciting interest and arresting attention.

As the work is not likely to come readily under our readers' notice, we have culled from it some specimens of its writer's literary mode and manner. Here, for instance, is a comparison (how different from the commonplace one to which we are usually treated) between the American and the Englishman.

> The American is a highly electric Anglo-Saxon. His temperament is of quicksilver. There is as much difference in vivacity and emotion between him and an Englishman as there is between an Englishman and an Italian. Yet curiously there is just as much difference between him and the Italian. His emotion is not the least like that of the Southern European. For behind the flash of his passion there shines always the steady light of dry, hard, practical reason. Shrewd yet excitable, hot-hearted and cool-headed, he combines the northern and the southern temperaments, and yet is utterly distinct from either.

From another page we extract a comment on the versatility of the American in changing his occupation or employment. "You never," writes Mr. Steevens, "meet the man who has got a good place and don't mean to lose it; no place is good enough for the American's estimate of his own deserts; nor is the estimate inexcusable, for no possibility is beyond his legitimate aspiration." Striking also is the author's power of phrase in giving his impressions of a city. Speaking of Chicago, Mr. Steevens says "The city consists of a casual horde of jostling individuals rather than a city of citizens. In this amazing community there are streets of illiterate, turbulent Poles and Czechs, hardly able to speak a word of English." New York inspires Mr. Steevens to indulge in superlatives. Never has he seen a city more hideous or more splendid. "Uncouth, formless, piebald, chaotic, it yet stamps itself upon you as the most magnificent embodiment of Titanic energy and force." Boston has a "decent, comparatively English air, as contrasted with New York." It is held to be the most cultivated of American cities, but Mr. Steevens thinks that its true merit is its cleanness. Travelling across the country gave Mr. Steevens the impression that England has yet to learn the A B C of railway luxury. The recent Presidential campaign, which was at its height when the author was here, figures very largely in the book, a complete history, indeed, of the struggle being given in attractive and comprehensive form.

The volume has elicited high comment from the London *Spectator*, whose reviewer speaks of the work as a series of brilliant letters, and of its author as "using a pair of young, lively and individual eyes, better than the best glasses, whether philosophical, scientific, or sentimental." He adds that "this young writer's interest in life, and his power of seeing, are so much more intense than his politics, that while engaged in giving an account of a curious, but not unparalleled, party struggle, they have betrayed him into an admirable, brief, and most intelligent portrait of America and the Americans of to-day, for which we may all be grateful. We do not know anything more lifelike, or in which a vivid perception of the points which best elucidate character and circumstances are better displayed. The survey is rapid, the impression keen. It is not a well-considered estimate balanced by experience, but a *coup d'œil*, penetrating, vivid, and, we have no doubt, just."

Mr. Steevens, continues the reviewer, gives us a view of New York in the everyday aspect of that astonishing place; he gives us "the still more astonishing Chicago, that monstrous mushroom of a city, grown up in a night, like Jonah's gourd, and already claiming supremacy in its continent, a place which in its mixture of beauty and ugliness, wealth and misery, palaces and hovels, seems to better every previous chaos of urban life known to the world. He also gives us Washington in a glow of completeness and composed adaptation to its purpose for which we were not prepared, and which relieves the other somewhat tragic picture with a touch of higher light and better air; and Leadville, the little pandemonium of a mining town, guarded by soldiers to save it from destruction by the strikers,—a wild and strange stronghold on that debatable ground between Work and Capital which has already witnessed some of the fiercest struggles of modern times.

Even the spectacle of Niagara becomes something more than a panorama in Mr. Steevens's hands, which is saying a great deal, for it seems almost impossible to imagine that any man should be capable of seeing that hackneyed wonder honestly for the first time. The American, however, is still more interesting to Mr. Steevens than even the wonderful places in which he dwells as a stranger and sojourner, ready at an hour's notice to change house and home, or even to wheel his dwelling away with him, like the snail his shell. The piquancy of finding a being so completely different from himself, speaking (more or less) his own language, formed (more or less) on the same traditions and literature, is keen in our young author's eyes like a new light.

It is this, perhaps, that gives point to the mingled attraction and repulsion with which the two races regard each other,—chiefly repulsion (it appears) on the younger side; chiefly an amused attraction on the other. The difference in feeling is very distinct to Mr. Steevens. "We may call this country daughter, but it does not call us mother," he says. And perhaps it would be a good thing if we could divest ourselves of the sentiment of indulgence (even when it is angry indulgence) which, as towards a wayward youth who will know better by-and-by, is so strong in the mind of the Britisher, to whom the idea of war with America is almost like that of civil war. The American has evidently no such feeling. He does not, indeed entertain any horror for civil war itself, let it be added, but has won his spurs therein, and gloats over his victory in the struggle with his brother. So did we, no doubt, Scots and English in the old days; but then we were not conscious of being brothers, and considered ourselves natural enemies, and opposed to each other from the beginning of things. We have often wondered how the population of the Southern States take the continual references to the war, the histories, the biographies, the perpetual return to that one subject. "It is hardly an exaggeration to say that no American newspaper is published any day of the three hundred and sixty-five which does not contain at least one allusion to the war." How do the vanquished take it?

Mr. Steevens's testimony is that they do not take it well. Except for the satisfaction of establishing by so many printed records the fact that "to the North's four millions, Sir, we never had more than six hundred thousand men," a great consolation after defeat — the continual crowing of the victors could scarcely do less than harm in the less fortunate regions. "The North has the ear of the world," says a Southern gentleman whom Mr. Steevens encountered in his travels; "they write the books and issue the publications, and we sit here at home, and nobody ever thinks of us any more." We have always felt that either a smouldering rancor, never allowed to die, or the most unearthly magnanimity, almost above the reach of human powers, must be cultivated in the South by the eternal glorification on the other side of "the war." But, to be sure, a race which sits at home and holds its tongue must bear the burden of its incapacity to defend itself, until at least it can find a pen which is sharper than its broken sword.

"These things make men mad," says another witness. "It's bad enough in the towns, but the farmers are worse. They're fighting mad, Sir. I know half a dozen who are ready to take their guns and come out this moment." That was before the decision of the Presidential contest, when all sorts of rumors were in the air. "I do not say," adds

Mr. Steevens, "that the excitement and ill-will may not die suddenly away by the second week of November, as it traditionally does. On the whole, so far as I am competent to have an opinion, I should say it will. Yet nothing would surprise me less than to find that this time it does not." It did, as we all know; but a King would sit very uneasily with these volcanoes about his feet. A President has stronger nerves, as all may see.

It is, however, Chicago that stirs our traveller to the highest point. "Chicago," he cries, "queen and guttersnipe of cities, cynosure and cesspool of the world! Not if I had a hundred tongues, every one shouting a different language in a different key, could I do justice to her splendid chaos." Here is his sketch of it, full of vigor, which communicates to the reader something of the thrill with which so wonderful a spectacle burst upon the beholder's eyes. He has already described it as "the most beautiful and the most squalid, girdled with a twofold zone of parks and slums; where the keen air from lake and prairie is ever in the nostrils, and the stench of foul smoke is never out of the throat; the chosen seat of public spirit and municipal boodle, of cut-throat commerce and munificent patronage of art:"—

Go first up on to the tower of the Auditorium. In front, near three hundred feet below, lies Lake Michigan. There are lines of breakwater and a lighthouse inshore, where the water is grey and brown, but beyond and on either hand to the rim spreads the brilliant azure of deep water—the bosom of a lake which is also a sea shining in the transparent sunlight. White sails speckle its surface, and far out ocean-going steamers trail lazy streaks of smoke behind them. From the Lake blow winds now soft and life-giving like old wine, now so keen as to set every nerve and sinew on the stretch. Then turn round and look at Chicago. You might be on a central peak of the high Alps. All about you they rise, the mountains of building—not in the broken line of New York, but thick together, side by side, one behind the other. From this height the flat roofs of the ordinary buildings of four or five stories are not distinguishable from the ground; planting their feet on these rise the serried ranks of the heaven-scaling peaks. You are almost surprised to see no snow on them; the steam that gushes perpetually from their chimneys, and floats and curls away on the lake breeze, might well be clouds with the summits rising above them to the sun. Height on height they stretch away on every side till they are lost in a murky cloud of smoke inland. These buildings are all iron-cored, and the masonry is only the shell that cases the rooms in them. They can even be built downward. You may see one of them with eight stories of brick wall above, and then four of a vacant skeleton of girders below; the superstructure seems to be hanging in air. Broader and more massive than the tall buildings of New York, older also and dingier, they do not appear, like them, simply boxes of windows. Who would suppose that mere lumps of iron and bricks and mortar could be sublime? Yet these are sublime and almost awful. You have awakened, like Gulliver, in a land of giants—a land where the very houses are instinct with almost ferocious energy and force.

These are the eyes of to-day, concludes the reviewer, looking upon the sublimities of a new order of things, awful not in beauty or grandeur of meaning, but in absolute power of fact, enormous, ominous, demoniacal. The nervous strength of the style, the thrill of novelty in the voice, the keen perception of that uncouth greatness which lies in force—if not beautiful yet contributing something not unreasonably substituted for beauty—is very noticeable and worthy the attention of any reader.

* * *

American historical literature has added grandly to its treasures in the "Life of Napoleon Bonaparte," which has just appeared from the pen of Dr. Sloane, Professor of History at Princeton. Two of the four volumes of which the work is to consist have just been brought out in sumptuous form by The Century Co. of New York. The minute study of the many-sided character of the great Emperor which Prof. Sloane has made is such as to place his work in the highest rank of biographies. It is free alike from hero-worship and from that spirit of detraction which has characterized so many French studies of Napoleon in recent years. Here are some judgments of the Princeton biographer:

The military side of Bonaparte's genius is ordinarily considered the strongest. Judged by what is easily visible in the way of immediate consequences and permanent results, this appears to be true; and yet it was only one of many sides. Next in importance, if not equal to it, was his activity in politics and diplomacy. . . . Morally considered, Bonaparte was a child of nature, born to a mean estate, buffeted by a cruel and remorseless society, driven in youth to every shift for self-preservation, compelled to fight an unregenerate world with its own weapons. Elevation to reputation and power did not diminish the duplicity of his character; on the contrary, it possibly intensified it. Certainly the fierce light which began to beat upon him brought it into greater prominence. Truth, honor, unselfishness are theoretically the virtues of all philosophy; practically they are the virtues of Christian men in Christian society. Where should the scion of a Corsican stock, ignorant of moral or religious sentiment, thrown into the atmosphere and surroundings of the French Revolution, learn to practise them?

CONTEMPORARY OPINION:

JACOBITISM, THE YOUNG PRETENDER, AND THE HIGHLAND CHARACTER

HE literary note, in "The World of Thought" department in our last issue, referring to the blow which Mr. Andrew Lang in his "Pickle the Spy" has dealt to the romantic side of Jacobitism, has, it seems, aroused the interest, historical and sentimental, of not a few of our readers. Some have challenged the facts which Mr. Lang has brought to light, while others write to desire fuller information as to the topic we briefly dealt with, and a further account of the historical incidents connected with the period of the Young Pretender's exile and hiding after the Rising of the Scottish clans in 1745.

It is no part of our duty to defend Mr. Lang when the facts he has unearthed are challenged, though we may say that history already bears witness to the degeneracy, in the later years of his life, of Prince Charles Edward's character; while we know that he was constantly shadowed by spys in the Hanoverian interest; and it has been more than suspected that these spys were once bosom friends of the unfortunate chevalier and among the professedly loyal Highland chieftains who espoused the Stuart cause only to prove faithless and betray it. On the other hand, it is our duty and a pleasure to meet the desire of those of our correspondents who write for fuller facts in regard to Mr. Lang's researches, embodied in the historical work he has lately issued under the title of "Pickle the Spy."

Perhaps we can best gratify the latter by reproducing in these pages a review of Mr. Lang's book, which appeared in the London *Spectator* since we wrote the paragraph which has stirred the several Scotchmen among our readers, who have written to us on the subject. To the *Spectator's* critique on the work, we are now in a position to append a rejoinder which Mr. Lang addressed to the editor, in which, while acknowledging the kindness of the reviewer, he takes occasion courteously to disown the rather anti-Jacobite sentiment which colors the critique, and to explain the attitude Mr. Lang himself assumes in regard to the work he has written, and to the discussion it has evoked.

Before appending the review, let us glance briefly at the chief facts in the Young Pretender's career. Thirty years before the rising which he incited, the first Jacobite rebellion, headed by the Earl of Mar, broke out in Scotland, and had it been better organized and better led, and had the old Pretender been himself in Scotland when his flag was unfurled, the issues of the affair might have been otherwise than disastrous. James, the elder Pretender, was still alive, though an old man, when his bold and active son, Charles Edward, resolved in 1744–5 to make a new effort to win back the Stuart crown. He had the advantage of being heir to the Stuart line, though the hereditary rights of his father and himself had been set aside and declared null under the Bill of Rights and other parliamentary enactments which were the accompaniments of the English Revolution of 1688. But more potent, perhaps, than his legal rights were Charles's attractive and winning appearance, his charm of manner, and many accomplishments, and these had their influence on the Jacobite nobility and the enemies of the House of Hanover who thronged the mimic court of his father and made it a nest of royalist and Papal intrigue. Not a little reliance, naturally, was placed on the active help of France, but an untoward fate befell the expedition which left Dunkirk under Marshal Saxe, in 1744, and France's interest in consequence sensibly cooled in the cause of Stuart restoration.

In spite of the disaster to the French fleet, Charles Edward, in midsummer of the following year, slipped off to sea in a French vessel, with seven friends, and in due time effected a landing on the west coast of Inverness. At first only a few minor chieftains joined the handsome invader, but, later on, Cameron of Lochiel rallied to his standard with some 1,500 Highlanders, and the attainted heir of the Dukedom of Athol read aloud a declaration claiming the British throne for the royal House of Stuart in the Vale

of Glenfinnan. Marching southward, Charles's forces were largely augmented, and, passing Sir John Cope's army, which had left the Scottish capital in search of the invader, the latter entered the palace of Holyrood and was proclaimed as "King James VIII." at the High Cross of Edinburgh. Cope's army, which meanwhile had gone as far north as Inverness, was conveyed by sea to Dunbar, thence, proceeding westward by the shores of the Frith of Forth, it met the young Prince's forces at Prestonpans and by them was defeated. Charles, elated at his victory, reëntered Edinburgh, where he held high carnival, the Scottish nobles with their ladies being greatly enamored of the youth and beauty of the "gay chevalier."

After loitering some weeks at the Scottish capital, Charles Edward, at the head of 5,000 men, now entered England, where he expected to be joined by English Jacobites and to march on London. But in this he was disappointed, for at Derby he was compelled to return to the north, closely followed by new musterings of the royal troops under the Duke of Cumberland. The Highland chiefs had opposed the march into England, since the English, though indifferent to the Hanoverian House, had for the most part lost all feeling of loyalty to the Stuarts. This neutrality of the English Jacobites, combined with the approach of the armies of Wade and Cumberland, counselled retreat, and, after winning the battle of Falkirk (Jan. 17, 1746), the Prince continued his way back into the Highlands of Scotland, and three months later gave battle to Cumberland on Culloden Moor.

Charles Edward's little army, "exhausted with a futile night march, half-starving, and broken by desertion," was in no condition to withstand the onslaught of the Royalists, whose force was augmented by 5,000 Hessians, while the King's ships intercepted all succor from France. The battle was sharp and decisive, and, the day going against him, Charles fled from the disastrous field, and the cause of the Stuarts was forever lost. Its adherents were mercilessly put to death, and the young Prince was for over five months a hunted fugitive. To the romantic devotion of Flora Macdonald, the Prince owed his ultimate escape to France, despite the reward of £30,000 which had been placed upon his head.

In France we lose track of the unfortunate youth, though it is known that he continued to hatch futile plots and to risk his head for his now hopeless cause. Finally he found a refuge in Italy, where he fell into dissolute habits,* and died at Rome in 1788. Many Highland chieftains — including Lords Balmerino, Lovat, and Kilmarnock — the last victims of beheading in Britain — came to the block, while the clans were disarmed and forbidden to wear the Highland costume, and the clan system was broken up.

Such in brief are the salient facts in the career of the Young Pretender. The reader will now be in a position to understand what Mr. Andrew Lang has achieved, in unearthing from British and Continental archives the details of Charles Edward's life in exile after the failure of the Scottish rising, and in piecing out the story of intrigue and treachery of which the unfortunate Prince was the victim. His work, "Pickle the Spy, or the Incognito of Prince Charles," attempts to trace the Prince's life after his forcible expulsion from France in 1748, as the result of the Peace of Aix-la-Chapelle, to the period of his father's death in 1766. During the interval it is known that he was secretly harbored in Paris by ladies of high birth, was cloistered in Avignon, Florence and Rome, and even paid two clandestine visits to London, in the interest of his cause. After Culloden, for forty years he lived and plotted in secret, some portion of the time being given to romance and the seductions of an idle society, under the glamour of "Bonny Prince Charlie's" once gay and chivalrous nature.

In 1772 the Prince married a bright girl of nineteen, Louisa, Countess of Albany, afterwards connected with the Italian poet Alfieri; but the marriage was a failure, since by this time Charles Edward was little better than a sot, and the Countess had to seek refuge from his abuse in a nunnery. A daughter for a brief while survived him, known as the Duchess of Albany, but she was the child of his Scottish mistress, Miss Walkenshaw. The last and perhaps the best of the Stuart race, was Charles Edward's brother, the Cardinal and Duke of

*For an estimate of Charles Edward's later social life, see Encyc. Britannica, vol. v. p. 427.

York, who lived on to the year 1807, and before his death surrendered to George IV., then Prince of Wales, the crown-jewels, carried off from England by James II.

The ill-fortune that ever dogged the Stuarts is thus summarized by a writer. Between 1371 and 1714 (343 years) fourteen Stuarts sat upon the Scottish, and six of these also upon the English, throne. A race unhappy as few, they were Robert II. (1316–1390); Robert III. (1340–1406), who died of grief, his elder son murdered, his second an English captive; James I. (1394–1437), for eighteen years a prisoner, afterwards murdered; James II. (1430–1460), killed at the siege of Roxburgh; James III. (1451–1488), murdered, with his son in rebellion against him; James IV. (1473–1513), slain at Flodden — his much-loved mistress, Margaret Drummond, was poisoned; James V. (1512–1542), who died broken-hearted at the rout of Solway Moss; Mary (1542–1587), beheaded at Fotheringay, thrice a widow and for twenty years a captive; James VI. and I. (1566–1625); Charles I. (1600–1649), beheaded; Charles II. (1630–1685), for fourteen years an exile; James VII. and II. (1633–1701), for twelve years of his youth an exile, and again for the last twelve of his old age; and Mary (1662–1694) and Anne (1665–1714), his daughters who supplanted him and both died childless. Thus five of the fourteen met with a violent death; two died of grief, and seven succeeded as minors.

We now reach the review of Mr. Lang's work, which the *Spectator* speaks of as an "exposure of Jacobitism" and as the most serious contribution that writer has made to historical, if not to British, literature. The work, the reviewer adds, is written with a gravity becoming its subject and its author's object. "Occasionally what Mr. Robert Louis Stevenson has termed Mr. Lang's "incommunicable humor" leads him to intrude into regions consecrated to Arnoldian "high seriousness" what looks like irritating flippancy. There is absolutely nothing of the sort here. The book is not only well written—Mr. Lang always writes well—but it is written with a point, purpose, and merciless directness of style which recall Macaulay and Froude, rather than himself, in what is commonly regarded, perhaps, quite erroneously, as his normal mood. Hitherto Mr. Lang has been accounted somewhat of a Cavalier in his historical sympathies; the strong, scornful—here and there almost hissing—anti-Jacobitism of 'Pickle the Spy' is rather in the vein of 'the wild westland Whig,' of the sort that fought at Drumclog and fell at Bothwell Bridge. There is only one passage in the book which we greatly object to as recalling the old, good-naturedly, sceptical, and superficial 'There's nothing new and nothing true and it is no matter' view of life and history. It is that in which Mr. Lang minimizes the value of his own historical researches.

He says, 'The whole book aims chiefly at satisfying the passion of curiosity . . . . . Our history is of next to no political value, but it revives, as in a magic mirror somewhat dim, certain scenes of actual human life.' We beg to differ from him. His history—provided the facts on which it is based are impregnable—is of great political value. It tears the mask from latter-day 'Prince Charlie' Jacobitism.

The work gives us a ghastly Stevensonian—nay, a Zolaesque—picture of the young Pretender as a drunken debauchee, a broken man without candor, courage, character of any sort, incapable of fidelity to a cause, a mistress, or a follower, 'hiding in the alcove of a lady's chamber in a convent,' and doing even more contemptible things. Above all, it proves the chivalry of the Highland chieftains to have been an absolute imposture, and allows them nothing but a barbarian and purely physical courage of the wild cat order. When that chivalry was subjected to the test of poverty it broke down; it became treachery of the blackest type. These 'heroes' became spies in the service of the British Government, sold their master's secret, and were willing to sell his person for a mess of pottage. The only circumstance that can be considered at all satisfactory in connection with this almost unique treason is that the chief traitor did not even so much as receive the money for which he had sold his soul and his honor. Surely that history cannot be regarded as 'of next to no political value' which virtually though indirectly proves the Hanoverian succession to have been an almost unmixed blessing to the country, and very nearly justifies the hideous Cumberland

'settlement' of the Highlands, and the unspeakable massacre of Glencoe.

Mr. Lang began his study of Pickle the Spy—some of whose letters have already been published by Mr. Murray Rose, and which proved him to have been a traitor to Charles, by making known his movements after the '45 to the British Government—in the Pelham Papers in the Additional Manuscripts of the British Museum. These include the letters not only of Pickle but of James Mohr Macgregor, whom Mr. Stevenson has so powerfully portrayed in 'Catriona.' Mr. Lang sent them to Mr. Stevenson for use in a novel which he did not live to finish. Mr. Stevenson believed Pickle to have been James Mohr. Mr. Lang identifies the spy, who styled himself not only Pickle but Roderick Random and Alexander Jeanson, to have been none other than 'young Glengarry,' the son and heir of the very proudest of the Highland chieftains, otherwise Alastair Ruadh Macdonell.

The leading facts which Mr. Lang has brought together in support of this very grave charge, and the cumulative effect of which, to our thinking, is only too conclusive, may be thus too easily summarized. It is quite certain that Pickle had been an officer in the French Army; it is equally certain that Glengarry was. Both—but no other chief—are represented as having been in Charles's *entourage*. Both—but no other chief—were to head Highlanders in what is known as the Elibank attack—it only reached the stage of a plot—on George II. in London in November, 1752. Both were very ill in February, 1753. Both succeeded their fathers in September, 1754. Both were very intimate with the Earl Marischal. Both spell "who" as "how." Both wrote the same hand. Glengarry is accused directly by Blair, Æneas Macdonald, and Cameron (Lochiel's brother) of theft, forgery, treachery, and finally of selling himself to Prime Minister Pelham in the year 1749. Pickle asks that an answer to a letter of his, written in 1760, be addressed direct to Alexander Macdonell, of Glengarry.

Finally, when Glengarry dies, Pickle's letters cease. It is to be feared there is no getting over these facts, and that this illiterate spy, whose miserable letters helped at least to frustrate Jacobite designs after the fiasco of the '45, was the greatest of the Highland chieftains, and that compared with him Thackeray's Barry Lyndon is a gentleman.

Mr. Lang, continues the *Spectator* reviewer, has made other equally important and equally painful discoveries regarding Prince Charles, with the help of the Stuart Papers and other important documents. All readers of the young Chevalier's history are aware that after his expulsion—no other word can be used—from Paris, and his departure from Avignon in 1749, he mysteriously disappeared altogether. He was supposed to have been engaged in political intrigues, and had been 'sought vainly in Poland, Prussia, Italy, Silesia, and Staffordshire.' Mr. Lang has run him to earth in Madame du Deffand's fashionable convent in Paris, where he lived with and was apparently kept by his mistresses, such as Madame de Talmond, Madame de Vassé, and Mdlle. Luci. We see him, the victim of the drink habit, which he acquired in Scotland, fall lower and lower till his death comes as a relief. Mr. Lang incidentally brings into prominence a number of hitherto unknown or little-known facts in connection with the history of Charles and the Jacobites after '45. He gives fresh information as to the relations between Frederick the Great and the Jacobites,—information that had not received due notice from Carlyle. He throws valuable light on Charles's preparations for the invasion of England in 1750 with twenty thousand stand of arms.

He tells more fully than ever before the story of Clementina Walkinshaw, Charles's Scotch mistress, whose daughter, Burns's "Bonnie lass of Albanie," was legitimized by the Parliament of Paris in 1784, and as Duchess of Albany attended her father in his last days. We have some curious light on Charles's relations with Madame de Pompadour. With the help of a letter of Glengarry, Mr. Lang enables us to understand the meaning of the Elibank plot against the life of George II. It is so far pleasing to find from this that Charles had a dislike to assassination. Mr. Lang's book is of very great interest as throwing many sidelights on a mysterious period of British history. But it is of supreme importance as dealing a fatal blow—and one driven home with great ability and Voltairean decision—to British belief in

the young Pretender and the nobility of the Jacobite chiefs. But had he not better be on the outlook for dirks—literary, if not other?

To the *Spectator's* critique we promised to append Mr. Andrew Lang's rejoinder. Here it is:

"I hope," he says, "that I may be permitted to plead 'Not guilty' of the rather extreme view of Highland character, and of Prince Charles's character, attributed to me by your very kind reviewer of 'Pickle the Spy' in the *Spectator* of February 13th. Charles became worthless; but my purpose was to show the extraordinary strain under which a nature originally of brilliant qualities and great charm broke down. He had to live the life of a hunted beast, or go to Rome and abandon hope. Think of the strain on a Prince beset by spies and assassins, compelled to be hidden among women, like Achilles, or to lodge over a butcher's shop, and only go out under cloud of night, the alternative being the ruin of a cause to which he was constant. This course of life broke down Prince Charles. His courage I do not impugn, but defend. Compare him with 'Fecky,' or George IV., or Cumberland, that brutal thief and brave man. No; I draw no Hanoverian or other political moral.

"As to the clans, their courage, self-sacrifice, and fidelity need no praise of mine. In certain chiefs—'these few evil ones,' I said—there was a savage duplicity; but if we think of Glengarry, Æneas Macdonald, and the caitiff Samuel Cameron, let us not forget Clanranald, Tiendrish, Kinlochmoidart, Ogilvie, the two Gasks, Invernahyle, Nairne, Strathallan, Flora Macdonald, the good Lochiel, and Pitsligo, the Gordon of his day. Highlanders and Lowlanders meet in this first group of noble names that come into the memory; surely *their* 'chivalry' was not 'an absolute imposture.' Indeed, I reckoned their virtues too familiar for mention, nor do I think that Pitsligo, Gask, or Clanranald would have been ministers inferior in character and parts to Bubb Doddington for Fecky, or Newcastle for George. The loyalty of the common clansmen not only despised wealth, but disdained in several cases to yield to torture.

"Of Charles people may hold their own opinions, but I have never found a hint that Madame de Vessé and Mademoiselle Luci were 'his mistresses,' nor, of course, that he was 'kept' by them, like Marlborough, Porthos, and Tom Jones. They were women of high character, and Mdlle. Ferrand (Luci) was of remarkable philosophic genius. I should indeed deserve to be dirked if I maligned ladies, or the Highlanders as a people."

We take regretful leave of this pitiful but interesting subject, the last romance of the Stuarts, and commend such of our readers as care to pursue the theme to possess themselves of Mr. Lang's notable book. The illumination is great which the author has thrown on the secret history of the era, and his work sets at rest the question who of the Highland companions of the unhappy Prince were loyal and who were treacherous during the dark period of his European hide-and-seek. Certainly, when all is said, there was more of constancy and devotion than of treason, since, amid all the Stuart plottings, the English government and its spies, together with the ambassadors and courts of Europe, were helpless till in 1750 a Highland chieftain of the highest rank basely sold himself to the English Crown. With what assiduity Mr. Lang must have wrought in tracking the events, great and small, of the story, is apparent from the number and variety of the sources which he has industriously tapped, including the Stuart Papers in Queen Victoria's Library at Windsor, the letters of English ambassadors in the State Papers, the political correspondence of Frederick the Great, together with French and other archives. The book contains the spy's unpublished letters and information, with those of another spy of the period—James Mohr Macgregor—Rob Roy's son.

To a Scotchman, Mr. Lang's work will particularly appeal, especially to one who has imbibed from Scott's "Waverley" what he knows of the Scottish history of the period and has come under the glamour of the Stuart name. But with all its romantic material, which Mr. Lang well knows how to use, there is in his work the sting of betrayal and treachery, which will be as little palatable to a Scotchman as is the emphasis the author lays upon the degeneracy of Charles Edward's character.

G. M. A.

AN ANCIENT INSTITUTION OF LEARNING:

THE UNIVERSITY OF GLASGOW

IN his address to the graduates on the occasion of his first performing the duties of Chancellor of the University of Glasgow, the present Earl of Stair told an anecdote which illustrates the spirit of the mediæval days in which that university had its birth. "I trust," he said, "I shall not be accused of bad taste if I refer briefly to an ancestor of my own, James Dalrymple, afterwards the first Lord Stair, who was educated at this university. Stair entered the regiment of Lord Glencairn as captain, in support of the Covenant. He had not long followed the profession of arms when, hearing that there was a vacant professorship in the university, he came and claimed to be admitted as a candidate."

He appeared at the University, we are told, as a soldier in his buff coat, with blue facings, and demanded admission. After a comparative trial James Dalrymple was declared the successful competitor for the chair of logic. It was the age in which bearing arms was considered more honorable than scholarship, and when the professor was more esteemed by showing the qualities of a soldier. The age was that when the church was paramount over kings and potentates, when the *Collegium Generale* was established in Glasgow by authority of Pope Nicholas V. The Papal Bull was dated the seventh of January, 1450, and accorded to the new university the power to grant degrees, and appointed the Bishop of Glasgow the Chancellor and Rector. Thus was the second university established in Scotland, that of St. Andrews being the first.

In 1450, the northern kingdom was distracted by the plots of ambitious nobles, a boy king, James II. of Scotland, being on the throne. The people had however time to give attention to the instruction of the rising generation. The parish school was an established institution and was well-nigh universal, while burgh and grammar schools had existed for more than a century. Scotland was one of the earliest European countries to engage, on any considerable scale, in the work of educating the people, and the more general appreciation and demand for education among her sons appears to have had one important effect on the universities, namely, to make them more democratic and popular than most other colleges that trace their beginnings to the Middle Ages.

Without endowments and without property, but with the patronage of two or three small chaplainaries, the University of Glasgow came into existence. It was admirably aided in its early struggles by Lord Hamilton, who, in the year 1460, donated to it a building and four acres of ground on High Street. This was the principal street of the old city, where resided the magistracy and the gentry, and its name with the Saltmarket is not unfamiliar to readers of Scottish history and romance. For over four hundred years the fortress-like buildings and the gardens, where had walked, as students, such men as John Knox, Dugald Stewart, James Watt, and Sir William Hamilton, and, as professors, Francis Hutcheson, Thomas Reid, and Adam Smith, constituted the home of the university. But as the older part of the city, in the course of time, fell into decay, modern buildings and a new locality had to be found for the institution. In 1871, the university was transferred to Gilmorehill, a small eminence in the western part of the city, overlooking the river Kelvin, and contiguous to one of the public parks. Towards the erection of the new buildings Parliament gave £120,000, and the people gave twice as much more. The buildings are of Gothic design, arranged in an oblong figure, enclosing two quadrangles, separated from one another by the Bute Hall, or chapel, a beautiful structure, to erect which the present Marquis of Bute donated £45,000.

A class-room is allotted to each professor, and over the entrance the name of the subject in which he gives instruction is inscribed. Towards the end of October the professor can be found during several days in his private sanctum adjoining his class-room, with pen in hand and register on table welcoming such matriculated students as signify their wish to attend his prelections of the ensuing session, after depositing the

requisite three or four guinea fee. In a short time the scarlet gown which students are expected to wear, particularly in the Latin class, is noticeable in the quadrangles and on the streets, the bell which marks the opening of one class and the closing of another is clanging hourly, the various class-boards are full of announcements, and the seventeen hundred young men have begun their daily march from home or lodging to the chosen halls of enlightenment. The majority of these come from the country districts, the Saxon from the lowland counties, the raw-boned Gael from the western isles, and not a few from England, Ireland, and foreign countries—for not infrequently the Glasgow professor has a world-wide reputation which will draw students from every clime. Several classes meet as early as eight o'clock, and a stranger may then have a good opportunity of observing the quality of the Scottish students. They appear to range from seventeen years in age upwards, and are for the most part strapping fellows. Some come from rich men's homes and some from lodgings, where the only extravagance allowed is the burning of the gas into the small hours; but, as students, all meet on a common footing; no distinctions are discernible save those created by the results of the class examinations, which occur at intervals of from one week to two months.

Between classes, students have a chance to become acquainted with one another in the library reading-room. Casual acquaintanceship is also formed in the ordinary way. The isolation and unsociability of this arrangement were defects which have been much mitigated in recent years by the formation of the Students' Representative Council, made practicable by the generosity of a wealthy citizen, who donated a sum to build the necessary club-house which now graces a part of the university grounds. The students have since been recognized as a corporate body, and have a standing in relation to the University Court, the Senate of professors and the General Council of graduates, such as they never had before. The purpose of the gift was to make such a thing as "university life," no less than university study, a reality in Scotland, and it has had a wholesome effect in that direction.

The system which accords to the professor all his fees, in addition to the income from the endowment of his chair, makes a professorship worth in some instances as much as $10,000 a year, and, when added to the unusual dignity which surrounds the position, it is little wonder that Scottish university chairs are generally filled by men of eminence in their respective subjects. A university is honored by such men, and the lustre of a great professor's name is something in which the student also feels some satisfaction. The latter may sometimes be troublesome to an assistant, but he always regards the professor himself with great respect and speaks of him with pride.

Professors in those subjects that are taught by means of lectures, such as Moral Philosophy, Logic, and English Literature, have a prodigious task the first year in preparing a daily lecture of an hour's duration. The classes of the years following are, however, liable to receive literally the same lectures, as such expenditure of energy as would be necessary to produce new lectures is not likely to be relished by a professor and could oblige only a few idlers. The lecturing system gives rise to a peculiar anomaly, which, in the estimation of many, calls for some justification. Often a student with an old copy of the lectures can follow a speaker or precede him at pleasure, with eloquent passages marked for applause, and with even the jokes numbered and indexed. It must be admitted, however, that professors most liable from the nature of their subjects to be tempted to provide a stereotyped course of lectures are often heroic enough to depart materially from the beaten track, thus putting the lazy student with the old copy at once on a level with his less fortunate neighbor whose pencil is disfiguring many pages of clean paper in the course of an hour. From an experience of the system the verdict of students generally will be found that a professor who is faithful to his old lectures is much more satisfactory than one who relies mainly on extempore speech. In the latter case the more difficult the subject the greater is the tendency to digression. The old but prepared lecture is as much the better of the two as a book is superior to a newspaper.

In some of the classes there is wide disparity of attainment, though students

purposing to take a degree have to pass an entrance examination which ensures a suitable initial standard. Particularly in such subjects as mathematics and physics many a student follows his professor at a great distance throughout the entire session. What Mr. J. M. Barrie in "An Edinburgh Eleven" relates of Professor Chrystal reminds one of Lord Kelvin who for fifty years has filled the chair of Natural Philosophy at Glasgow. Lord Kelvin's subject, however, does not allow him to gain ground so steadily. He goes and returns like the waves of the sea, and the progressive element is the weekly examination. The explanation of the latter on Friday afternoon is the most instructive exercise of the class.

The Rectorial election which occurs at the beginning of every third session is a rousing event. The students elect the Lord Rector and the time-honored custom is to make the contest sharply political, thus affording the greatest freedom to the exuberant spirits of all. The only service expected from the Lord Rector is the delivering of an address at the ceremony of his installation, which may take place at any time he finds convenient during his term of office. Such men as Edmund Burke, Francis Jeffrey, Lord Brougham, the poet Campbell, Sir Robert Peel, Lord John Russell, Lord Macaulay, Sir Archibald Alison, Sir Edward Bulwer-Lytton, Lord Palmerston, Benjamin Disraeli, W. E. Gladstone, John Bright, and A. J. Balfour have held the office and performed its accompanying duty. The occasion of the Lord Rector's address is a memorable one in the career of every undergraduate.

Among the noteworthy organizations of Glasgow University are its library and the Hunterian Museum. Every year $3,500 is expended on the purchase of books for the library, and from time to time large additions come to it from private individuals. The Hunterian Museum was founded in 1783 by the will of Dr. William Hunter, one of the most eminent physicians of his day, brother of Dr. John Hunter, the founder of scientific surgery. He bequeathed for this purpose a valuable collection of books, manuscripts, coins, zoölogical and archæological specimens, together with a sum of $40,000.

Many changes in the university's arrangements have been introduced by the commissioners who were empowered by the Scottish Universities Act of 1889. Among others, since 1892 women have been allowed to become matriculated students and to take degrees. Their instruction, however, is conducted separately at Queen Margaret's College, an institution which now forms part of the university. Readers of the Encyclopædia Britannica will find that several of the prominent contributors to that work were professors of the University of Glasgow. Lord Kelvin (Sir William Thomson), professor of Natural Philosophy, wrote the articles on Elasticity and Heat; Edward Caird, professor of Moral Philosolophy, the articles on Cartesianism and Metaphysics; the late John Nichol, professor of English Literature, the articles on American Literature and Burns; Richard C. Jebb, since 1889 professor of Greek at Cambridge, the articles on Aristophanes, Demosthenes, Euripides, Greece (History and Literature), Isæus, Isocrates, Lysias, Olympia, Pindar and Rhetoric; and John Veitch, professor of Logic, wrote the article on Victor Cousin, the French philosopher.

T. HUNTER.

Prof. William Crookes, the eminent English chemist, in his recent presidential address before the Society for Psychical Research, essayed a scientific theory of thought-transference (telepathy) and "suggested that it was quite conceivable that the intense thought concentrated by one person upon another, with whom he is in close sympathy, should induce a telepathic chain along which brain-waves should go straight to their goal without loss of energy due to distance. Such speculation was, he admitted, new and strange to science. It was at present strictly provisional, but he was bold enough to make it, and the time might come when it could be submitted to experimental tests." Going on to speak of the spiritual body, he protested against the view that it need in any way resemble the material body, which corresponds only to a material environment. He said that his idea of spiritual bodies made them "centres of intellect, with will, energy, and power, each centre retaining the individuality and persistence of self and memory, and each mutually penetrable, while at the same time permeating what we call space."

THE SCIENCE OF WHOLESOME LIVING:

DIGESTION AND DIET

IN our last issue was discussed, with the functions and nature of our food, the important subject of the nourishment of our bodies. In this article it is proposed to conclude the discussion by considering the question of the digestibility of our foods, for the value of a food as a source of nourishment does not depend solely on its composition — that is, the percentage of protein and other nutrients which it contains — but also on the extent to which these nutrients are digested. As before, we are indebted to a learned medical authority writing in the pages of the Edinburgh Scotsman:

There can be no doubt that the digestibility of foods varies very considerably, according to the state of the digestive organs of the individual. It is an every-day experience with a large majority of people that certain foods do not agree with them. The case of milk may be cited as an example of a wholesome food which, in many cases, does not seem to be easily digested. What the cause of this is it is, as yet, impossible to say; but the fact nevertheless remains, although, so far, we may not be in a position to explain it. It is an illustration of the old adage that "what is one man's meat may be another man's poison." A possible suggestion is that it is due to ferments in the digestive canal, which, in certain cases, effect the change of harmless substances into injurious and even poisonous forms. The process of digestion has not inaptly been compared to the extraction of precious metal from an ore. The food is first, like the ore, reduced to a fine state of division by the teeth, and then submitted to the action of the gastric juices in the stomach and intestines, which dissolve out the digestible portion of the nutrient, which is then absorbed through the porous walls of the above-mentioned organ.

To estimate the extent to which a nutrient in a food is digested, it is necessary to make an actual experiment with a living subject. Although the digestibility of the coarser fodders and feeding stuffs, used for the rearing of stock, has been tested by experiments carried out with live animals, but few experiments have been carried out on the digestive capability of man. But, from the small number of experiments which have been carried out, it seems reasonably safe to conclude that when a healthy individual, who is blessed with sound digestive organs, partakes of an ordinary diet of meat or fish in proper quantity, all, or nearly all, of the protein nutrients are digested. The same is not the case, however, with vegetable foods. Thus, in the case of potatoes or beans, for example, a third or more of the protein matter present escapes digestion. It would also seem reasonable to infer from the above-mentioned experiments that much of the fat in animal foods, as well, indeed, as in vegetable foods, may fail to be digested. The carbohydrates, like protein compounds, are in general very digestible. Sugar, for example, is probably in all cases completely digested.

As to the conditions influencing digestion but little is understood. It would seem, however, that the flavor of the food and the food adjuncts affect digestibility of food to a much less extent than is commonly believed. What, however, has a very distinct influence on digestion is the preparation — such as the cooking, etc., — of the food. For example, the protein nutrients present in many foods in a soluble condition, on being submitted to boiling heat, are converted into an insoluble condition. This is the case with the typical member of the group — viz., albumin — and is familiar to all in the process of boiling an egg. In this form the albumin is not nearly so soluble as it is in the uncoagulated form; indeed, it requires the action of an acid or of digestive juices to dissolve it. The same is not the case, however, with the characteristic protein nutrients of beef — syntonin and myosin — which are not coagulated by heat. Despite the above fact, eggs are as completly digested as meat, although the time required may be longer, for all we know. From experiments, it would seem that hard boiled eggs are as thoroughly digested as soft boiled eggs, although here again the time element may be different. Again, certain foods seem to be better adapted for the digestive organs of children than for those of adults, this being strikingly the case with milk.

The chief juices which render the protein nutrients available for the needs of the body are the gastric and pancreatic fluids. Both these juices act to produce a common result, but they do so in different methods. Gastric juice is of an acid nature, while the pancreatic

juice is of an alkaline nature. Such food, then, as may escape the action of the gastric juice, is probably dissolved by the pancreatic juice. The greater digestibility of the proteids of animal origin as compared with those of vegetable origin may be only partially due to their nature. It may also be due to the fact that the latter are admixed, as a rule, with a considerable amount of extraneous matter. Thus, in such foods as oatmeal, wheat flour, or potatoes, there is comparatively little protein matter, and a large amount of starchy material. In such a case the nitrogenous matter is so diluted that the difficulty of digesting is increased. There can be no doubt, too, that a variety in diet helps digestion. We are all aware of the craving we have for variety in diet; but few probably realize that this craving is based on physiological grounds, as well as upon those of taste. Sameness of diet, if continued for too long a period, may actually impair the efficiency of the digestive organs. The percentage of fat in a food has also a marked influence on its digestibility. Lean meat is more readily digested in the stomach than fat meat. We may add that the more finely the food is masticated the better is its chance of being fully utilized.

The question of the influence exerted by cooking on the digestibility of a food, is an important one, and merits consideration. Cooking is a refinement of civilization, and is dispensed with by the savage. Indeed, it has been held that the state of a nation's civilization may be measured by the art of its cooking. Some foods we take uncooked, such as milk; but most foods we prefer in the cooked state. Now, cooking has probably a double action on food. By improving — both by the process of cooking as well as by the addition of condiments, spices, etc., — the appearance and flavor of the food, it helps to excite the secretion of the digestive juices. Again, in many cases it helps to disintegrate the food. The action of cooking, for example, on certain protein bodies in meat, such as collogen, which acts as the binding material of the animal tissue, is to convert them into a much more soluble form. Thus, collogen when cooked is converted into soluble gelatine. It must be remembered that even where the nutrients of a food seem to be rendered less soluble by the process of cooking, yet the result of cooking in rendering the food more savory, and in thus stimulating the secretion of the digestive juices, may be such as to more than compensate for this loss in digestibility.

It may, therefore, be safely asserted that, all things considered, proper cooking unquestionably tends to increase the digestibility of the protein in foods. Nevertheless, the few experiments which have been carried out with regard to the rate at which digestion takes place have shown that certain foods, when in the raw condition, are more quickly digested than when cooked. In experiments carried out at Tübingen, in Germany, a year or two ago, on the digestibility of raw meat, rare meat, and meat cooked for different lengths of time, it was found that the raw and rare meat were more quickly digested than the cooked meat. Thus, while raw meat took two hours, meat boiled, but only half-done, took two and a half hours to digest. Again, meat boiled, but well-done, took three hours, which was the same period that was required for the digestion of roasted, but half-done meat; while roasted meat, well-done, required four hours. From this it would seem that boiled meat is more quickly digested than roasted meat. Experiments were also carried out on the subject of the influence of cooking on milk. It was found that the milk uncooked took three and a-half hours to be digested, while boiled milk took four hours. It may be added that sour milk seems to be more quickly digested than fresh milk.

These facts, however, only hold good with regard to meat diet. Many vegetable foods, on the other hand, require cooking to fit them for use. Especially is this the case with foods rich in starchy matter, in which the starch is confined in cells, the walls of which are acted but slowly upon by the digestive juices. When such foods are cooked the cells are ruptured, while the starch itself undergoes a certain change, which renders it more easily digested.

With regard to the action of flavoring materials on the digestibility of food, although much has been written on the subject, it has been based upon but little actual experiment. By flavoring materials we mean such substances as spice, mustard, etc., beef tea and meat extracts, tea, coffee, chocolate, and similar beverages, as well as alcoholic drinks. There can be no doubt that the effect of flavoring materials or appetizers, what our German friends call "Genussmittel," have a very important influence in stimulating the digestive juices. For instance, when one takes salt or sugar, the result is that there is an abundant flow of saliva; indeed, even the sight of certain savory foods produces what we popularly call "a watering of the mouth." The result of taking such appetizers, or flavoring materials, no doubt, improves the digestion, by either causing a larger amount to be digested, or else helps to effect a quickening of digestion. But this increase in digestion seems to be chiefly limited to invalids, and does not appear to affect to the same extent the digestion of healthy individuals. There can be no doubt that the craving for alcohol—which may be classed in this category, since it stimulates the digestion—and its frequent use by the poorer classes as a remedy in cases of disturbances of the stomach, is often due to a wretched diet of indigestible foods. The action of meat extracts, tea, coffee, etc., is similar to alcohol and wines, and affects the nervous system. Spices, on the other hand, act directly on the glands which secrete digestive juices.

And here it may be well to point out that such foods as soups contain very little real nutriment. Their action is almost entirely of a stimulating nature. When meat is boiled there is a certain amount of its nutritive matter, especially its mineral matter, removed. Meat which has been extracted to any extent forms an incomplete food, as has been strikingly proved by experiments on dogs, which, on being exclusively fed with such meat have died. It is for this reason that meat which has been long boiled should not be used as an exclusive diet. It is always desirable in such cases to serve along with the meat the soup in which the meat has been boiled.

Boiling as a method of cooking meat can scarely, therefore, be regarded as so rational a

method of preparing food as roasting, frying, or broiling. It may be interesting to point out that not a little depends on the way in which meat is boiled. When the precaution is taken to plunge it at once into boiling water the loss of nutritive matter is very much less than when it is allowed to remain in the water while the latter is being heated.

How far the quantity of food affects the proportion digested is not known; but it would seem reasonable to suppose that too much food interferes with complete digestion. On the other hand, there is some evidence in support of the belief that a very small quantity of food is likewise less perfectly digested than the proper amount. The drinking of too much water with food seems also to impair digestion.

On the subject of the influence of exercise on digestion but little is known, and such experiments as have been carried out furnish contradictory results. Here, again, no doubt, much depends on the individual. There seems to be little question, however, that during sleep digestion is diminished. That our diet is not always an ideal one has already been indicated. The diet of the rich may be said to contain, as a rule, too large a proportion of protein; while that of the poor contains too little. The tendency of most people is to indulge in too fatty a diet. Perhaps in this respect brain-workers are most guilty; since they require less fat in their diet than those engaged in physical work. It is on this account that fish, more especially such fish as cod, which are poor in fatty matter, are to be recommended; not certainly, however, as we have already pointed out, because fish is, in a special degree, a brain-making food. The origin of this popular theory has been recently traced with much ingenuity by Professor Atwater. It rests on two false suppositions, the first of which is that fish is especially rich in phosphatic compounds, and the second, that phosphatic foods are especially brain-making. Many will recall Mark Twain's advice to an inquiring literary correspondent who had sent him a specimen of his brain-power. "If the specimen you send is about a fair usual average, I should judge that perhaps a couple of whales would be all you would want for the present, not the largest kind, but simply good middling-sized whales."

A common mistake in our diet is that it contains an excessive amount of sweetmeats. Indeed, we use far too much sugar nowadays. Not merely is our diet badly adjusted, but as a rule we use a needless quantity of food. Excess of one-sided foods should be avoided. Such foods are butter and pork (fatty foods) and rice (starchy food). Cod-fish may also be cited as a one-sided food, since it contains only flesh-formers. It may be generally said that most of the staple foods are not one-sided. This is the case, for example, with milk and oatmeal. It is a fortunate circumstance that the promptings of Nature do much to rectify the tendency we have to indulge in one-sided foods. The custom of eating rice or potatoes with fish, or meat pulse with rice (Hindoos) and skimmed milk with potatoes (Irish), is based on sound physiological principles. Another example of how, under nature's cravings, a proper adjustment of nutrients in food is effected, is afforded by the food of lumbermen in the American forests, where work is of a most arduous kind. The staple articles of their diet are beans and fat pork, the former rich in flesh-formers, and the latter a most concentrated fuel food.

It may be asked, What are the requirements of the body, and what constitutes a proper diet? This question leads us to discuss, in conclusion, the subject of food dietaries, as they are called. Various attempts have been made by different physiological authorities to fix food standards. Although these food standards differ within certain limits, there is, on the whole, a wonderful agreement. Of course, great variation exists on the part of the individual. The requirements of the body, at different stages of its growth and under different circumstances, are naturally different. Children do not require the same amount of food as adults; similarly, when the body is hard at work, it requires more food than when it is at rest.

Experiments carried out on the subject show that in the case of a man fasting and undergoing no muscular labor, the consumption of muscle, under such circumstances, amounted to about ¾ lb. per day, and about ½ lb. of fat. Other experiments have shown that with a food consisting of 3½ ozs. of protein, the same quantity of fat, and 8½ ozs. of carbohydrates, the body of a man at rest neither lost nor gained anything. The amount of food required depends largely on the amount of work done by the body, as well as on the size of that body. Again, it may be said that old people require less food than younger people, and this for the reason that the former are, as a rule, less active than the latter. Sex also makes a difference, inasmuch as a woman undergoing the same amount of muscular activity only requires eight-tenths as much food as a man does.

We have already pointed out that all foods can be valued according to the amount of potential energy they contain. A comparison of the relative quantities of potential energy in food nutrients required by persons of different classes is shown by the following statement:—Laboring man at moderate work, 10; woman at ordinary work, 8; child, fifteen to six years old, 7; child, six to two years old, 5; child under two years old, 2½. The following amounts of food material may be regarded as being sufficient to supply the necessary food constituents for a mechanic or day-laborer:—8 ozs. of lean beef steak, 20 ozs. of bread, 30 ozs. of potatoes, 1 oz. of butter, and 37 ozs. of water—total 96 ozs., or 6 lbs. The dietaries of a large number of people in different parts of the world have been collected. Space does not permit us to quote at any length from these. It has been pointed out, however, that in the case of the dietaries of a large number of French Canadians, a variation of from 3 to ½ lb. of animal food, and from 5½ to 1½ lbs. of vegetables occurred. Estimating the amount required by a laboring man in terms of pure nutrients, the following may be stated as a fair daily ration:—4.2 ozs. of protein, 2 ozs. of fat, and 17.6 ozs. of carbohydrates; for a child one to two years old:—1 oz. of protein, 1 1.3 ozs. of fat, and 2¾ ozs. of carbohydrates. For an aged man—3½ ozs. of protein, 2½ ozs. of fat, and 12½ ozs. of carbohydrates; and for an aged woman—2¾ ozs. of protein, 1¾ ozs. of fat, and 9½ ozs. of carbohydrates.

SOME TYPES OF MODERN MEN OF SELF-CULTURE:

IV—ROBERT COLLYER, THE BLACKSMITH PREACHER

F the half dozen portraits of men whom we have taken as types of self-culture to embellish our cover, the most noticeably intellectual of the group is that of Robert Collyer, the blacksmith preacher. The face has character, the brow is massive, and the head, which is not unlike that of Henry Ward Beecher, is that of a virile, resourceful, large-minded, and thoroughly human man—a man physically and mentally alike cast in nature's largest and, in many respects, finest mould. His robust frame he owes, in part, to the healthy English stock of which he comes, and; in part, to the hard work at the forge and anvil in his young growing days, for when he was fourteen he was apprenticed to a blacksmith in a Yorkshire village, and for nine years after he came to this country he made hammers in the outskirts of Philadelphia, acting the while as a local Methodist preacher and itinerant anti-slavery lecturer.

His vocation in the hard mechanic arts, while it developed his physical strength and gave him brawn and muscle, did something at the same time in endowing him with that large sanity and intellectual broad-mindness for which he has long been noted, for only from a hearty, healthy man, sound in mind and limb, can one look for that large humanity and ready sympathy with the toil-worn and the suffering, and above all for that broad tolerance in matters of faith and creed, which have been Robert Collyer's most marked characteristics.

The incessant toil of Mr. Collyer's early years gave him little chance to acquire a systematic education, and what he has become intellectually he owes entirely to his unwearied efforts to use the scant leisure, and improve the few opportunities of an humble yet contented and even joyous life. How he used these opportunites we gather from the stories that are told of him devouring books in his youth whenever he could lay hands upon them, and, while at work in the smithy, even snatching a glance at the page of an author in whom he was interested at every stroke of the bellows. It is the old story fraught with lessons of encouragement and incentive to every youth who has the sense to heed them—of the value of using to the utmost the opportunity at hand, however scant it may be, and the success that waits on every earnest, assiduous effort to overcome difficulties and make light of the obstacles in the path of progress and high achievement.

It is always interesting, in the case of a man who has won his own way upward in life and attained eminence in his later years, to know the factors in the upbuilding and development of the life and character of the individual. Some of these, in Dr. Collyer's case, we happily know, and, as in the youth-time of many another notable man, books, we find, were the sources of inspiration, coupled with ambition and a constant thirst for and diligence in reading. In the home of his parents, we learn, there were but four books accessible to the eager youth, and upon these he fed at once his soul and his imagination.

They were the Bible, Bunyan's "Pilgrim's Progress," De Foe's "Robinson Crusoe," and a work of a didactic or counselling and stimulating nature, entitled "The Young Man's Companion." Subsequently, he became possessed of "Sandford and Merton," and this and "Robinson Crusoe" and the Bible were, we are told, his favorites. Every penny he could save, his good mother relates, went to buy books, and, she adds, that "I scarcely remember a meal to which he sat down at which he did not have a book in his hand, and on such occasions he would become so engrossed that if he were wanted for anything we had to call 'Robert' sharply before we could win his attention."

This family picture has been added to by a sketch that exhibits young Collyer, a youth of fourteen, at work at the blacksmith's forge, after having earned his own living for six years in a linen factory. To the smithy, where the lad wrought, a gentleman came one day, and, entering it, found a boy blowing the bellows. Close observation, it is related, revealed the presence of a book before him, its pages kept open by two bits of iron placed on a shelf near his head. Each time he brought the bellows down

or released it, he caught a sentence from the book. The passion for reading in young Collyer was thus fed "according to his ability to catch snatches of time and fragments of literature."

These proofs of the industry of the blacksmith apprentice have since been emphasized by Dr. Collyer himself, when in later life he modestly deprecated the idea that he sorely pinched himself or suffered unduly in the struggle of his youth-time to obtain an education. "Such a thing as a struggle for learning," he remarks, "never entered my thoughts beyond the mere elements — the three R's, as they say — and at the last of these I was a mere dunce, and am still, while at the second I was not much better. As a reader, however, I was a banner-boy every time, and the truth is, for the rest of it, I seem to have 'growed.' Books were to me a delight beyond all telling. I loved them for their own sake, and devoured them with a measureless greed, so that I do not remember a day when I tired of them or imagined that they would not be as a fire enfolding itself, with no outcome or income, save just the blessedness of getting at their heart."

But we pass from the youth to the man. And yet, before doing so, let us glance briefly at the facts of our subject's early life. Robert Collyer was born in England, at Keighley, Yorkshire, December 8, 1823. His grandfather was a sailor and served for a time under Lord Nelson, and was present at the battle of Trafalgar. His father was a blacksmith, earning, we are told, eighteen shillings ($4.50) a week — the usual wages of a mechanic in England at the period. To his father's trade young Robert was apprenticed in 1837, after only four years of schooling, between his fourth and his eighth years. We have seen how he otherwise supplemented his education, and his intelligence was further stimulated by the demands upon him when, in 1849, he became a local preacher in the Methodist communion. "The way opened," he has said, "for me to speak to my neighbors and friends in the Methodist meetings, and they seemed glad to hear me; so I kept on saying what came to me, and then I found the stores of things I had read and treasured unknown to my conscious self ready to my hand. The words," he continues, "poured from my mouth almost without effort and I was able to speak connectedly of facts, and, in my discourse, to make use of thoughts, which had accumulated in my mind during my period of desultory reading."

With his marriage, which occurred in 1850, a new era dawned on his life, for he took ship for the New World and landed in Philadelphia, to resume for a time his work as a mechanic, though with ambitions in his heart for a larger and more notable field of usefulness.

The latter he found in resuming his peripatetic missionary work, which he followed for a while in the Methodist fold, but soon afterwards exchanged it for what, to him, was the freer and more congenial, because more elastic, communion of the Unitarian church. During his sojourn in Pennsylvania, he actively pursued his trade, which at this period was a hammer-maker at Shoemakertown, meanwhile fitting himself mentally for his life work as a preacher, lecturer, and, in no mean respect, author and publicist. The Unitarian body he joined in 1859, and in the wider latitude of that communion he gained intellectual breadth and strength, and was not long in winning recognition for himself as a powerful and eloquent preacher. As such he brought strenuous aid to the cause of slavery-abolition, in which at this era he was enthusiastically interested, as well as to that of a righteous patriotism.

In the interest of his new found church, Mr. Collyer left the East for the West, settling at Chicago, at first as a minister-at-large, but speedily accepting an invitation to take charge of the nucleus of the Second Unitarian church in that city, which had just been organized by a handful of members of the Denomination. At this time the organization had only a modest meeting house, but as the body grew under its able and eloquent preacher the edifice known as Unity Church was erected and opened in the year 1869. This structure unhappily was destroyed in the great fire of 1871, but was restored soon afterwards, and for ten years it became a centre of live spiritual and philanthropic work, under its now widely known and zealous pastor.

Dr. Collyer's fame at this time was enhanced by the work he did for reform in the mammoth city of his adoption, by his public services in the year of the

great fire and at a time of suffering in the State, occasioned by a widespread and devastating storm, and by his humane and patriotic labors with the army of the West during the cruel years of the Civil War. In the latter service, particularly, the great preacher endeared himself to all lovers of the nation; and such was his devotion to the soldiers of the Union and such his tenderness to all sufferers, whether Federals or Confederates, that his name was a consecrate one in all parts of the country. When the conflict was over and the native dead were brought for burial to Chicago, it was Dr. Collyer who was called upon to officiate at the solemnities of the grave, and his the patriot eloquence that eulogized the heroes as they passed to their last resting-place.

Nor is testimony wanting, during the period of his golden pastorate in Chicago, to the esteem in which he was held by his favored flock, by his brother ministers, and by the citizens at large. From a sympathetic sketch of the great divine, at this era of his life, we make the following appreciative extract: "He (Dr. Collyer) holds a prominent position in the ranks of philanthropy and reform. In the pulpit he has achieved a high reputation. Few ministers are listened to with more admiration or attract larger audiences. He has a vigorous mind, a lively versatile fancy, a deep vein of charming sentiment, a singular sweetness and quality of temper, and withal a certain simple, touching eloquence, which is greatly added to by a continual sparkle of irrepressible but quiet mirth of which he appears to be brimful. In the affairs of life he is a man of sterling common sense and rectitude." That success has not spoiled him or made him less true to his manhood, is witnessed by the fact that he has never disowned the humbleness of his origin, or sought to conceal what, on the contrary, is his proud boast, that he long earned an honest living by the craft of a skilled hammer-maker and brawny blacksmith. Indeed, one of the cherished heirlooms of the good divine to-day is the anvil from the smithy in the old English village of Ilkley on which he was wont to work, and which, it is said, some members of his old Chicago charge acquired and brought over as a proud memento of their pastor's strenuous toil in former days.

One other witness to Dr. Collyer's well-earned fame may be cited in the fact, that when the great New England divine, Theodore Parker, died, an effort was made, but made in vain, to persuade Dr. Collyer to come to Boston to fill his charge. Later, however, he was induced to sever his connection with his attached flock in Chicago, on the occasion of his accepting a call, in the year 1879, to the Church of the Messiah, in New York. Here he has since successfully labored, finding time in the intervals of arduous pastoral and other work to make a few visits to his old English home and to prepare and publish several volumes of discourses, added to those which were issued from his pen while in Chicago. These include "Nature and Life" (1866), "The Life that Now Is" (1871), "The Simple Truth: a Home Book" (1877), and "Lectures to Young Men and Women" (1886). These are marked by the characteristic qualities of the preacher — earnestness and sympathy, coupled with learning and thought and a felicitous and poetic style.

G. M. A.

Notwithstanding the presence of the European men-of-war, bloodshed has not ceased in Crete. At Candia there would appear to have been a breach of the armistice by Mussulmans, who, having been armed by the Governor, attacked several villages; and in the fighting there were several persons killed and wounded on both sides. The commanders of the European ships have lodged a protest with the Governor. There has been continuous fighting between Christians and Mussulmans at a point within an hour's march of Retimo. There have also been conflicts, attended with bloodshed, near Mataxa, and here a Turkish frigate opened fire on the Christians. Incendiary fires are reported from several villages. The insurgents have presented to the admiral in command of the combined squadrons a reply to the recent proclamation. They state that all the ties between the Porte and Crete are broken, and that the "only solution" of the present problem which will be accepted by the Cretan people is union with Greece. In course of a statement in the Hungarian Diet the other day, Baron Banffy, the Premier, stated that the agreement between the Great Powers to the effect that under no circumstances should the annexation of Crete by Greece be allowed was unanimous. Further details of naval and military preparations by Turkey come from Constantinople and Salonica. A decree has been issued at Athens calling out the 1891 and 1892 reserves in view of the mobilization of Turkish troops on the frontier.

FEDERAL CORPORATIONS AND THE CRÉDIT MOBILIER

NATIONAL BANKS AND THE "UNION PACIFIC"

IN 1790 a disagreement and serious contention took place in President Washington's cabinet over the question as to whether or not the Federal Government could lawfully create a corporation. This question has been a constant subject of debate by different political parties, members of Congress, and other Federal officers, ever since, and was recently agitating Mr. Cleveland's government, the problem being what should be done with its interest in the Union Pacific Railroad.

This railway matter is but a sequel to that old trouble in the first cabinet. The incident that started the disturbance was the recommendation of Alexander Hamilton, as Secretary of the Treasury, that a National Bank should be chartered by Federal legislation.

Thomas Jefferson, then Secretary of State, opposed the plan, upon the ground that the Federal Government had no lawful power to create a corporation, and that it would be drifting towards paternalism and running the government into private business and out of its only rightful realm, which, he declared, was merely to keep peace, while individuals worked out their own financial salvation.

Edmund Randolph, the Attorney General, Madison, and, in a word, all the opponents of the old Federal party, accepted this doctrine of the Secretary of State as the true one. The President finally sided with Hamilton and afterwards signed the bill incorporating the Bank.

The differences between the two great members of the cabinet grew and they became so widely apart upon this and other matters that finally Jefferson resigned, recording this saying that "Hamilton and I were pitted against each other every day in the cabinet like two fighting cocks." It might be thought today that this should have settled that dispute, but the fact remains in history that it did not.

Jefferson's party asserted that the act chartering the bank was unconstitutional, and grumbled at everything that arose in Congress in reference to the bank and its successor, until the charter of the latter expired by limitation in 1836—the former having expired in Madison's first administration.

This second National Bank was chartered by Congress in 1816, and, three years after its establishment, the question of the constitutionality of the act creating it came before the Supreme Court of the United States. The court then declared it constitutional, solely upon the ground that such a corporation was "necessary to carry into effect the [expressly] granted powers of the Federal Government to borrow money, maintain and supply armies, coin money," etc.

Benton subsequently said that after experience was tantamount to a "victory of the Constitution over the Supreme Court," and arrayed facts in history against the "necessity" argument for a National Bank. The operations of the last National Bank resulted, as all socialistic institutions in a government tend to result, in the grossest frauds and abuses, among which were building houses for speculation, selling coin, taking usury and unduly lending money to editors, brokers, and members of Congress. After the charter of this last bank expired, Daniel Webster, who had been its ardent defender, admitted that the view that a National Bank was a necessity to the carrying out of the expressly granted powers of the Federal Government was an "obsolete idea."

The idea, however, that the Federal Government could lawfully create a corporation was not destined to become so obsolete, and within a few years after Webster passed from the scene, we find the government incorporating a railroad company and going into the business of railroad building and maintenance, by a similar line of procedure to that which it had followed in the creation and running of a bank. This railroad enterprise, however, was principally justified by its supporters under that provision of the Constitution which gives the Federal Government power to "regulate commerce." The logic of this reasoning was that the Government can create and enter into commerce in order to regulate it.

The railroad matter and the government's connection with it form quite a little history in our country.

In 1856 the Republican party declared in its platform that a railroad should be built to the Pacific Ocean and "that the Federal Government ought to render immediate and efficient aid in its construction, and, as an auxiliary thereto [should render aid] to the immediate construction of an emigrant road on the line of the railroad." Four years later, the Republican platform was substantially the same as that of 1856, so far as this railroad matter was concerned. But there was also a plank in the platform of 1860 which asserted that "a return to rigid economy and accountability is indispensable to arrest the systematic plunder of the public treasury by favorite partisans."

Within two years after the Republican party came into power, it passed the Act which incorporated the Union Pacific Railroad Company.

The party that has always denied the power of the Federal Government to lawfully create a corporation was then, in the main, without representation in Congress, and nearly a dozen States were out of the Union and entirely unrepresented in either branch of the Federal legislature.

The capital stock of the railroad was fixed by Congress at $100,000,000. By the act creating it, the Government not only gave it the right of way over all public territory, with sufficient land for all switches, depots, etc., but agreed to issue government bonds to be used for the construction of the road, in these amounts: $16,000 per mile for 150 miles of the intended road, $32,000 per mile for 850 miles, and $48,000 per mile for 300 miles of the mountainous part. The government bonds actually issued by the time the road was completed amounted to over fifty-four millions of dollars, par value. The Government retained a first mortgage upon nearly all the property of the company, to secure the repayment of these bonds. This act also granted to the company every alternate section of land along the route that was within ten miles on each side of the projected road.

By the year 1864 there were less than twenty miles of the great road actually built and in running order; but at the prayer of the company Congress doubled the land grant, making it extend twenty miles on either side of the road — amounting to 12,000,000 acres.

At this time Congress became even more liberal, and proceeded to give the company power to issue its bonds for over twenty seven millions of dollars, and declared that these company bonds should be a first mortgage upon the road, subordinating to them the Government's lien for the bonds which it had agreed to issue by the Act of 1862. This Act of 1864 met with opposition on the ground that the government bonds previously donated were alone enough to build the road, but the opposition was defeated. The result was that $27,236,512 worth of the government bonds issued for the building of the road were secured only by a second mortgage after the passage of the Act of 1864, and the company's placing of its bonds on the market.

With the issue of land grant and income bonds, sale of stock, government and first mortgage bonds, the company actually had the enormous capital of $111,000,000 with which to build the road, — nearly all of which came from the Government.

The task of building the road was now before the gentlemen composing this company. They not only wanted to get the road into running order, but also sought to make money out of the construction. They could not contract with themselves to build it, for that would be unlawful and might stop the issue of the Federal bonds. If they undertook to build it themselves, as the mere act of the company, they could not enjoy any return until the operation of the road began, and the government bonds would be beneficial only to laborers, materialmen, and bankers.

Oakes Ames was now in Congress, and largely interested in the Union Pacific Railroad Company. His brother, Oliver, was president *pro tem.* of the company, and James Brooks, C. S. Bushnell, Henry S. McComb, and Thomas C. Durant were upon the board of directors. The question that confronted them was how could they retain their interests and positions in the company, and at the same time make and execute contracts with it for the building of the road and reap the profits of contractors, and avoid personal liability. George Francis Train suggested to one of them that they purchase

the "Pennsylvania Fiscal Agency," a corporation organized for the purpose of doing all kinds of business, except banking, without personal liability to its stockholders. This suggestion was acted upon and carried out, and the name of that corporation was then changed to the "Crédit Mobilier of America." Durant became its president, and, at the same time, was vice-president of and a director in the Union Pacific.

Contracts were then made by the Railroad company through its directors with different persons, in which these persons agreed to construct different sections of the road at extravagant prices. It was however understood that these contracts were not to be executed by the contractors, but were to be assigned to the Crédit Mobilier, which would execute them and receive all the profits thus arising, and that these profits would in time be distributed as dividends of that corporation.

As a matter of fact, these contracts were executed by the Crédit Mobilier; and this corporation built the entire road, at a cost of $50,720,958, while the price actually paid by the Union Pacific was $94,650,287, leaving a clear profit of $43,929,329 for the Crédit Mobilier! It followed, of course, since most, if not all, of the real owners of all the railroad stock were owners of most of the stock of the Crédit Mobilier, that no one was injured in the transaction but the Government.

The construction of the road was finally completed, on May 10th 1869, and in the meantime the stockholders of the Union Pacific had dwindled down to fifty-three men. These persons then owned a railroad corporation representing $100,000,000 of capital. Thus, some of the stockholders of this railroad company made a fortune in less than seven years through the Crédit Mobilier, aided by Congressional legislation.

It is a lamentable fact that not a few men of national prominence were unenviably connected with this affair, and some of them were in Congress voting to carry into effect, by gag rule, this gigantic fraud, while Washburn of Illinois and Stewart of Nevada were trying to defeat it.

"Jim" Fisk and Jay Gould tried to force themselves into the Crédit Mobilier to share the handsome profits that were being made, and in furtherance of this scheme procured interests in the Union Pacific, and then commenced suit in a New York court to compel the "stating of accounts" between the Crédit Mobilier and the railroad company. This frightened the Ames ring, and they hastened to Washington with a bill which they managed to get through Congress, which divested the State court of jurisdiction over the matter involved in the Fisk-Gould litigation.

But a day of reckoning was coming for the leaders and official beneficiaries in this imposition upon the government. Discord began to prevail among the stockholders in the Crédit Mobilier, and this finally led to a public exposé of the questionable transactions hitherto unknown to the public. The exposure came about in this way: McComb, who had done considerable service in lobbying one way and another for the Crédit Mobilier — in which he was a stockholder and knew all of its questionable transactions — claimed that he was entitled to two hundred and fifty shares of that corporation's stock, which was then worth several times its par value. He had been the coadjutor of Durant, and the Ames faction of the Crédit Mobilier had had a rupture with both of these men. Thus, when McComb asserted his claim, the Ames faction dismissed it with indignation, and they also did their best to remove Durant from the directory of the Union Pacific but failed. McComb then sued Ames and others to compel them to account to him for the two hundred and fifty shares of stock, all accruing dividends, and then tried to compromise the suit.

Although the Ames faction were threatened with exposure, and the publication of certain letters written by Oakes Ames to McComb, implicating several United States Senators and Representatives in bribery, was threatened, yet they refused to compromise. Seeing no chance at hand of the latter, McComb proceeded to take testimony in his suit and produced these letters, which were immediately published in the New York *Sun*. This action threw the whole country into high excitement, and at the following session of Congress a resolution was passed to investigate the relations of the Crédit Mobilier with the Union Pacific Railroad, and the alleged bribery of

congressmen for legislation favorable to the Crédit Mobilier.

The investigation began in December, 1872, before a Congressional committee, but for some time was conducted in secrecy. The press could get no report of what was going on, and public clamor finally drove Congress into passing a resolution compelling the committee to hold its sessions openly. The whole truth was then disclosed, and, as a result of the investigation, on February 27th, 1873, the committee reported in favor of resolutions expelling Oakes Ames, Representative from Massachusetts, and James Brooks, Representative from New York, from their seats as members of the House of Representatives. These resolutions, however, were not adopted, for the reason that the offenses were committed more than five years before the election of these members to that (the forty-second) Congress, and there was some doubt of the legal right to expel a member for official misconduct during a previous Congress. Resolutions strongly censuring them were, nevertheless, passed, with others reciting their misconduct, which, in Ames's case, was set forth as "seeking to procure Congressional attention to the affairs of a corporation in which he was interested, and whose interest depended upon the legislation of Congress, by directly inducing members of Congress to invest in the stock of said corporation." In Brooks's case it was stated to be "for the use of his position of Government Director of the Union Pacific Railroad and a member of this House, to procure the assignment to himself or family of stock in the Crédit Mobilier of America, a corporation having a contract with the Union Pacific Railroad, and whose interests depended directly upon the legislation of Congress."

Great confusion took place on the passing of these resolutions. The galleries were crowded with an expectant public and friends of the guilty. So intense was the excitement in the House that sympathizing women shed tears. A further result of the investigation was the introduction of a resolution in the Senate, expelling James W. Patterson, Senator from New Hampshire, from his seat in the United States Senate. This resolution was introduced on the same day that the investigating committee reported, and the Senator's term of office was then to expire within four days and simultaneously with the forty-second Congress.

The Senate was so engrossed with business, as it always is at the end of each session, that there was not sufficient time to give the matter full consideration, and the resolution died upon the calendar without its having been acted upon. The Senate, however, before the end of the session determined that the matter should be taken up at the following session, but this promise was never fulfilled.

Thus ended the most exciting investigation that was ever made by a Congressional committee; and within three months after it closed, Oakes Ames died, leaving an estate valued at over $5,000,000.

The Supreme Court of the United States afterwards held the incorporation of this railroad company to be constitutional, and cited its decision in the National Bank case as an authority and precedent for so doing.

These are some of the results of the three chief attempts of the Federal Government to enter into private business, and to create a corporation for that purpose, and the end is not yet.

SHELLEY GROVER.

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The sudden collapse of the steel-rail pool, with the fall in price of rails from $28 to $18 a ton, remarks the New York Evening Post, should make two classes of our statesmen think even harder than their wont. Trust-investigators must sigh as they see their best efforts eclipsed in a day by simple business conditions. No legislative committee was striking terror to the heart of the steel-rail pool. No laws were threatening them from Washington — in fact, Mr. Dingley and his fellows were hard at work to give the pool a law which would enable them to keep up their prices and withstand the wicked foreigner who might try to ruin an American industry by offering rails at $25 a ton. But in one day the railroad situation and competition send the price crashing down 35 per cent. Suppose a trust-destroying committee had produced such a result, what peans would have been sung, how the press would have clamored! But the inevitable march of improvement and reduction of the cost of production do the work, and we shrug our shoulders and pass it all off as a fresh instance of the machinations of capital.

THE STORY OF HUMAN PROGRESS:

THE ENGLISH REVOLUTION OF 1688*

WHETHER the great revolution by which the Stuarts lost the throne of Great Britain be considered from a religious or a political point of view, it was a serious crisis, profoundly affecting the future of England, and carrying its influence beyond the country in which it took place. Moreover, it was not regarded by the people of Great Britain as the introduction of a new state of things, but as an assertion of principles recognized explicitly or implicitly in their past history. Just as the Reformation in England was primarily an assertion of the independence of the Church, an independence of which she had been unlawfully deprived, so the Revolution was a recurrence to principles which had been suppressed by the encroachments of the monarchy.

A Crisis

Preparations

In fact, ever since the Norman conquest, the crown and the people had attempted to get sovereign power. The constitutions of Clarendon and the Great Charter were merely assertions of the rights of the people, as they had existed in early English history. It was the War of the Roses which, by the destruction of the nobility before a middle class had arisen, threw the power into the hands of the Tudor sovereigns, a power which they used tyrannically indeed, but with a certain wisdom and sympathy with their people which prevented them from being fully conscious of their loss of liberty. When, however, the Stuarts acceded to the English throne and endeavored to carry on the same tyrannical mode of government, without having the same knowledge of their people, a new state of things had arisen. Mr. Carlyle thinks that the real work was done by Cromwell and his Puritans, and that the Revolution of 1688 was merely the completion of the work done by the Parliament of Charles I., and there can be no question that the Puritan revolt prepared for the subsequent Revolution.

Charles II and James II

During the reign of Charles II, the memory of the evils of dissension was still fresh. On the one hand, the people had grown weary of civil war, and weary of the grim asceticism of their Puritan Masters. On the other hand, the King, warned by the fate of his father, refused to be urged on by the advocates of despotism. He did not want, he said, to be sent again on his travels. He had known enough of the bitterness and ignominy of exile. When his brother, James, Duke of York, came to the throne as James II., it was not long before he showed how different he was from his predecessor. It is hardly too much to say that he had all Charles's faults and none of his redeeming qualities. He was as selfish, as ungrateful, as licentious; but he lacked his brother's genial manner, and was obstinate, narrow-minded, and cruel. To urge him to take a particular course was often the surest way to determine him in a different direction. When a boy, his mother, Henrietta Maria, endeavored to make him espouse the Roman Catholic faith, and he remained an obstinate Protestant. When he came back to England and found Protestantism in the ascendant, he became a Roman Catholic.

Nonconformity in Charles's Reign

The problem which now awaited solution, the status of Roman Catholics, together with the right of the Crown to override the law, had come up under the previous reign. When the Act of Uniformity was passed, many were desirous of extending some measure of toleration to the Puritans, but the hatred of the Roman Catholics prevented any such measure from being taken. The Houses of Parliament, suspicious of the King's intentions, compelled him to publish a proclamation for

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* See the articles in the Encyclopædia Britannica on England, vol. viii, 350; Test Acts, vol. xxiii, 199; Declaration of Right, vol. xx, 555; Charles II., vol. v, 408; James II., vol. xiii, 559; William III., vol. xxiv, 578; Ireland, vol. xiii, 268; Duke of Schomberg, and the Battle of the Boyne, vol. xxi, 431. Also, see Macaulay's, Green's, Knight's and Gardiner's histories of England; Bishop. Burnet's "History of Our Own Times;" and Hale's "Fall of the Stuarts," in the Epochs of Modern History.— ED.

the banishment of Roman Catholic priests; and by their Conventicle Act of the following year (1664), they forbade, under penalties, all meetings for religious worship save those that used the Book of Common Prayer. A year later (1665), the Five-Mile Act was passed, by which every clergymen who had refused conformity to the Act of Uniformity was required to swear that he held it unlawful under any pretext to take up arms against the King, and that he would not at any time "endeavor any alteration of government in Church or State." These laws applied equally to Puritans and Roman Catholics; and in 1672 Charles, of his own authority, suspended all penal laws in matters ecclesiastical, thus giving religious liberty to both parties alike. The effort might have been more successful, if the people had not known that the real intention of the King was to give relief only to Roman Catholics; and the House of Commons, insisted on the withdrawal of the Declaration of Indulgence. They asserted that forty statutes had been violated by this declaration, and that "penal statutes in matters ecclesiastical cannot be suspended but by Act of Parliament." As the Lords pronounced on the same side, the King recalled his Declaration (1673).

The Test Act

Strongly prejudiced as the royal Parliament of 1661 was against the Puritans, they began to see that there was more danger to the Church from Roman Catholics. It was suspected that the King himself favored that religion, and it was well known that his brother, the Duke of York, had become a convert; it was further suspected that some attempt might be made, with the help of France, to restore the Roman Catholic religion. In order to check all such attempts a bill was introduced into the House of Commons, which soon became law, under the name of the Test Act, providing that no one should hold office, unless he first made a declaration of his disbelief in the doctrine of Transubstantiation, and received the Sacrament of the Lord's Supper in the English Church. (1673). While some Dissenters conformed to these requirements, it was impossible for Roman Catholics to do so. Among others, the Duke of York resigned his office in the admiralty.

Marriage of the Duke of York

The Duke of York had married Anne Hyde, daughter of the Earl of Clarendon, and by her had two daughters, Mary, afterwards wife of William III., and Anne, who succeeded William on the throne. Both of these were Protestants. Their father was now a widower, and married Mary of Modena, a Roman Catholic. (1673). A fear fell upon the people lest they should have a son who might hereafter be King. As a consequence many who had hitherto favored toleration generally became bitterly opposed to the toleration of Roman Catholics. In many respects Charles was willing to yield to the wishes of the Parliament, but he would not give up his brother's right of succession to the crown; yet he was willing to place considerable restrictions upon the power of a monarch who should be a Roman Catholic. This was far from satisfying the Parliament who very naturally believed that no restrictions would bind a Roman Catholic King; and they were prevented from passing an act excluding the Duke of York from the succession only by the prorogation and subsequent dissolution of Parliament. (May 1679).

Opposition to York

There was throughout the whole country a deep feeling of opposition to the prospect of James, Duke of York, becoming King; but unfortunately the opponents were not agreed on the substitute, some holding for the Duke of Monmouth, an illegitimate son of King Charles, others for Mary, the eldest daughter of the Duke of York, now married (1671) to her cousin William, Prince of Orange. Parliament threw out the Exclusion Bill which was intended to set aside the Duke of York (1681).

Accession of James II

Charles II died on February 6, 1685, and was succeeded by his brother as James II. It was, of course, a supreme desire with him to obtain liberty of worship for Roman Catholics, and he hoped to accomplish this by a conciliatory attitude towards the Established Church. He declared to the Privy Council that he had no thought of arrogating arbitrary power, that he would maintain the Constitution in Church and State as by law established. But he had mass celebrated openly in the chapel at

Whitehall, and he continued to levy taxes which had been granted to Charles only for his life. As, however, he issued writs for a parliament, this seemed only a temporary grievance. It was soon manifest, however, that Protestantism was in danger.

Rebellion, 1685 The Scottish Parliament having taken severe measures against the Covenanters, the Earl of Argyle landed from Holland in the Frith of Clyde, believing that the people in general would join him. He was almost immediately taken prisoner, carried to Edinburgh, and executed (June 30) under a previous sentence. The Duke of Monmouth, intending to coöperate with Argyle, landed at Lyme in Dorsetshire (June 11). His popularity speedily attracted a considerable body of men around him, although none of the country gentlemen took his side. After being proclaimed King at Taunton, he attempted to surprise the royal troops at Sedgemoor; but his ignorance of the ground and the difficulties in his way frustrated his attempt, and his forces were beaten (July 6). He was captured in the New Forest, brought before the King who refused him mercy, and was executed July 15. This rising was quenched in blood by the assizes held by the infamous Judge Jeffreys in the West and South of England. James rewarded Jeffreys by making him Lord Chancellor.

Violation of the Test Act James thought he now saw his way clear to remove the disabilities from his co-religionists, and he accordingly asked Parliament to repeal the Test Act. But it was at once seen that this would give to the King the power of filling every post in the army, as well as in the civil service, with men who would be ready to assist him in changing the constitution of the country. The revocation of the edict of Nantes in this very year (1685), by the King's cousin, Louis XIV., made them feel what might be in store for themselves. Without waiting for the desired change, James began to override the law by appointing to office men who could not take the test, and refusing to part with them. The Commons remonstrated, and the Lords seemed ready to join them, when the king prorogued Parliament. At the same time, he had about him a secret council of Roman Catholics, consisting of the Jesuit Petre, Lord Tyrconnel, Lord Arundel, and others, who had more influence with him than his ministry.

The Dispensing Power James, like his father and grandfather, believed that the King's will could overrule or set aside the statute law — a strange notion of parliamentary government; and so he resolved to revive the idea of dispensing with the execution of the laws, which had been done by Charles II. in the Declaration of Indulgence. He thought it well to get a decision from the judges allowing this claim; and when four of them were found to disagree with him, he replaced them by four others who decided in his favor. On the strength of their decision, Sir Edward Hales, a Roman Catholic, was secured in his appointment as colonel of a regiment, and Governor of Dover Castle. Thus the King was declared to be practically absolute. Louis XIV., who regarded England with great interest politically and religiously, congratulated his cousin on being now able to rule like a King; but the people of England began to fear that their liberties were being destroyed, and to think of the King's daughter, Mary, as a desirable substitute for her father. The King went a step further by making his confessor, Father Petre, and several Roman Catholic noblemen privy councillors.

Attacks on the Church The King had ordered the Clergy to desist from preaching on controversial subjects, and required the bishops to see that his order was carried out. But it was disobeyed by the Dean of Norwich, who was also rector of St. Giles's in London. The Bishop of London was requested to suspend him from his office and its emoluments; but only withdrew his license to preach for a few months. James appointed an ecclesiastical commission (1686), by whom the Bishop of London was suspended from his office.

Declaration of Indulgence (1687) One of the most serious steps taken by James, although apparently a very simple and innocent measure, was the Declaration of Indulgence. The King had hoped at first to continue the persecution of the Dissenters, and so to gain the support of the Church of England in his endeavor to se-

cure liberty for Roman Catholics. When this scheme failed, he determined, if possible, to win over the Noncomformists to his side by proclaiming a general toleration; and on April 4, 1687, he issued, by his own authority, a Declaration of Indulgence, suspending all laws against Roman Catholics and Nonconformists alike, and allowing public worship to all. But the Dissenters were not taken in by the device. Some small sects availed themselves of the toleration; but the great body of them were more opposed to the emancipation of Roman Catholics than eager for their own liberty; and besides, they had no security that a favor which came from the now arbitrary grant of the King would not, at any convenient season, be recalled. It was better to wait patiently for legal redress than to accept relief thus offered. The lawyers, who aspired to promotion, sent a deputation to thank the King for the Declaration, and professed their readiness to defend to the last, the maxim, *a Deo rex, a rege lex:* "The King is from God, and the law from the King."

Attack on the Universities, 1687

The law officers, being on his side, the King next took in hand to suppress the Church of England in the Universities. There being a vacancy in the Presidentship of Magdalen College, Oxford, the Fellows elected Hough, instead of Farmer, who had been recommended by the King. They were summoned before the ecclesiastical commissioners (of whom the Lord Chancellor was always one) and ordered to elect Parker, Bishop of Oxford, a married man, and by profession a Protestant, but at heart a Roman Catholic. But they stood to their election. Jeffreys bullied in vain. Two only having consented, the rest were expelled from the college. The new Dean of Christ Church was Massey, a Romanist, a royal appointment. At Cambridge, Dr. Pechell, master of Magdalene, vice-chancellor of the University, refusing to grant a degree to a Benedictine Monk named Francis, as he refused to take the oaths, was deprived of his office of vice-chancellor and suspended from the emoluments of his mastership.

Second Declaration, 1688

On April 22, 1688, James put forth a second Declaration of Indulgence, suspending all penal laws against Nonconformists, and abolishing religious tests as qualifications for office, and adding that the King would give no civil or military post to any one who refused to concur in this Declaration. On the 4th of May an order of council required the clergy of all denominations to read the Declaration from their pulpits on two successive Sundays. Those among the Clergy who had advocated the doctrine of passive obedience were in a real difficulty; and at a meeting held at Lambeth a petition was drawn up, praying that the Clergy might be excused. It was signed by the Archbishop of Canterbury and six other bishops. Sancroft, Archbishop of Canterbury, having been forbidden to appear before the King on account of his refusal to sit on the ecclesiastical commission, the other six presented the petition to King James, at Whitehall. They were Ken of Bath and Wells, Lake of Chichester, Lloyd of St. Asaph, Trelawney of Bristol, Turner of Ely, and White of Peterborough. The King was angry and alarmed. "This is rebellion," he said. "Did ever a good churchman question the dispensing power before?" Ken reminded the king that they had consciences, and must do their duty to God as well as the king, which only the more angered the king; and as he dismissed them, Ken rejoined, "God's will be done!"

Trial of the Seven Bishops

Hardly any of the Clergy read the Declaration. Samuel Wesley, father of John, preached from the text in the Book of Daniel: "Be it known ever to thee, O King, that we will not serve thy gods, nor worship the graven image which thou hast set up." When Bishop Sprat began to read it in Westminster Abbey, the whole congregation got up and went out. The seven bishops were summoned before the king in council. Refusing to find bail, they were sent to the Tower. Their passage thither by water was a triumphal procession. The people lined the river on both sides, and implored blessings upon them, and kneeling down asked to be blessed by them. The trial took place in Westminster Hall, June 29, 1688. At first nine were for the bishops and three against. Then two more gave in. Arnold, the king's brewer, held out. "If I say Not Guilty, I shall brew no more for the king. If I say Guilty, I shall

brew no more for any one else." Either way he was ruined! At last he also gave in; and the verdict was returned, "Not Guilty." The crowd in Westminster Hall broke out into applause, and shouts of joy ran over the streets of London. James was at Hounslow, reviewing the troops on which he was hoping he might depend. He heard a shouting in the camp, and asked the meaning of it. "Nothing," was the answer, "the soldiers are glad that the bishops are acquitted." "Do you call that nothing?" said the king. He might have learnt that he now stood almost alone.

Invitation to Prince William

Before this time proposals had been made to the Prince of Orange to come to the relief of England and claim the crown for his wife. But he had thought the time was not ripe, warned, perhaps, by the failure of Argyle and Monmouth. It is possible that now the acquittal of the seven bishops might have given a sense of security to the people, and that they might have been content to endure King James to the end of his life. But an event had recently happened which produced a change of feeling. On June 10, an infant prince was born.* So unexpected was this birth, four children having previously been born and died, that there was a general belief among the opponents of the King that there had been no birth to the Queen at all, and that the child had been smuggled into the room. In any case, this child would be brought up a Roman Catholic and would claim the throne. Immediate action was therefore resolved upon. On June 30, the day of the acquittal of the bishops, Admiral Herbert, disguised as a sailor, carried a paper signed in cypher, inviting William to land with a body of troops in England, and assuring him that the greatest part of the nobility and gentry were dissatisfied, and that large numbers of soldiers and sailors were so disaffected that they would join the Prince's standard.

Landing of Orange

William's difficulties were manifold. He had his own people in the Netherlands to consider. There was a comparative uncertainty in regard to the action likely to be taken by the English people. Then there was his life-long antagonist, Louis XIV. of France. Happily for him, Louis had just proclaimed war against the Emperor, and the war threatened to become European. On the one hand, William was relieved of his fears for his own country, and, on the other, he wanted to get England on the side opposed to France. Louis, who had his army on the frontier of the Spanish Netherlands, offered James help against the invasion of William, and it was refused. Whereupon he withdrew his army and invaded the Palatinate. In September a proclamation was drawn up by William and translated into English by Gilbert Burnet, afterwards Bishop of Salisbury, and the principal authority for the history of these times. This proclamation set forth that the liberties and religion of the people were in danger, that the birth of the young prince was attended with grave suspicions, and that William, on his own behalf and that of his wife, had been requested to come to England with troops which, however, would not be used against the country, but would be sent back when he should have secured the assembling of a free and legal Parliament.

James was seriously alarmed and was ready to give up much — all but his dispensing power. On October 21 he produced proofs of the birth of the Prince of Wales. But on October 16 William had taken leave of the States-General of the Netherlands, telling them that he was going to England in defense of the reformed religion and the independence of Europe, and commending to their care his beloved wife in case he might not return. Contrary winds detained the fleet and compelled several changes of plans, but at last they landed at Torbay, November 5, 1688, the anniversary of the discovery of the Gunpowder Plot. By next day at noon they were at Exeter, where they remained ten days.

Defections

It was soon felt throughout the country that the cause of James was a losing one. The country gentlemen began to flock to William. In other parts of the country troops were being levied for his assistance. Manchester, York, Derby and other places, declared for the Revolution. Even Oxford, the centre of loyal-

* Afterwards known as the "Old Pretender," the father of Prince Charles Edward Stuart.—ED.

ism, welcomed William's friends with shouts of "No Popery." But, worse still, James's own friends and relatives began to fade away. Lord Cornbury, eldest son of Lord Clarendon, and the King's nephew, first attempted to take his soldiers over to William, and at last rode off with some of them to join the invaders. But he was acting under the influence of a greater than himself, John Lord Churchill, afterwards the great Duke of Marlborough. Churchill and others, while professing friendship for James, were preparing to hand him over to William; and William, on his part, was by no means anxious to have the keeping of his uncle and father-in-law.

James set out to meet William and reached Salisbury on November 19. There he learned from Feversham the spread of disaffection in the army, and he heard that the troops of Orange were approaching from Exeter. During the next night Churchill and the Duke of Grafton with others fled away to William. On the 25th James and his troops were retreating to London. Before next morning Prince George of Denmark, husband of his younger daughter Anne, had gone off. Still worse, on reaching London on the 27th, the king learned that the Princess Anne and Lady Churchill had set out to join the insurgents under Danby of Nottingham. "God only can help me," cried the unhappy man, "for my own children have forsaken me."

Escape of James

James was now ready to promise anything, even to surrender his power of dispensation. But the French ambassador wrote to his master that it was a mere device to gain time. Whilst a conference was going on between commissioners from James on the one side and William on the other, the Queen and the infant prince were (December 10) placed on board a vessel lying in the Thames and soon arrived in France. On the 11th James crossed the river, throwing the great seal into it, and made his way to Sheerness, but he was stopped and brought back by some fishermen and conveyed to London — a most inconvenient event for the party of revolution. He was allowed to choose Rochester as a residence, and from this he was suffered to escape, December 23, joining his wife and child three days later at St. Germains near Paris.

William in London

When James fled from London (December 11), riots immediately took place, and the Roman Catholic chapels were wrecked. Sunderland and Father Petre had left the Kingdom; but Judge Jeffreys was caught in the disguise of a sailor in a public house at Wapping, and committed to the Tower, where he died April 18, 1689. William was entreated to hasten his march and he arrived at Whitehall on December the 18th, the day that James left London for Rochester. It was a critical moment in English history, and its significance was well expressed by Sergeant Maynard, a lawyer ninety years of age, when he was presented to William. "You must have survived all the lawyers of your standing," said William. "Yes, sir," was the answer, "and, but for your Highness, I should have survived the laws too." The business immediately in hand was to return to constitutional methods, and William called together the House of Lords and an assembly composed of all who had sat in any of Charles's Parliaments, with special representatives from the City of London.

The Convention

This body, a Parliament except that there was no King to summon it, was called a convention, and met on January 22, 1689. On the 28th the Commons resolved that "King James II., having endeavored to subvert the Constitution of the Kingdom by breaking the original contract between King and people, and, by the advice of Jesuits and other wicked persons, having violated the fundamental laws, and having withdrawn himself out of the Kingdom, has abdicated the government, and that the throne is thereby vacant." After a slight opposition from the Tories this resolution was adopted, both being fairly satisfied with its contents, as on the one hand the misgovernment of James, and on the other his abdication, was given as the reason for declaring the throne vacant. The Tories in the Lords proposed that James should remain nominally King, and that the country should be governed by a Regent; but this was overruled. Then Danby proposed that, passing over the supposititious infant, Mary, being the eldest daughter of James, should be now recognized as Queen of England. But Mary would not hear of being set above her husband; and

William made it plain that he would neither be Regent nor administer the government under his wife. On February 6, the Lords passed the resolution adopted by the Commons.

William and Mary

A week later the conference between the two houses which had brought the Lords to an agreement with the Commons resulted in the crown being offered to William and Mary as joint sovereigns. As long as William lived, he was to administer the government, Mary attaining to actual power only in the event of her surviving her husband. After the death of both, the crown was to go first to any children they might have, then to Anne and her children, and finally to any children William might have, in case of his surviving Mary and marrying again. William and Mary accepted the crown on these conditions.

The Declaration of Right

The offer of the crown was accompanied by the Declaration of Right, in which were clearly declared the constitutional principles which had been violated and which were now to be maintained. It is an assertion of the "true, ancient, and indubitable rights of the people of this realm," and one of the most important documents of English history, containing, as it were, the very essence of the Revolution. We give its details. It declared:—

1. That making or suspending laws without consent of Parliament is illegal;
2. That the exercise of the dispensing power is illegal;
3. That the Ecclesiastical Commission Court, and other such like courts, are illegal;
4. That levying money without consent of Parliament is illegal;
5. That it is lawful to petition the Sovereign;
6. That the maintenance of a standing army, without the consent of Parliament, is illegal;
7. That it is lawful to keep arms;
8. That elections of members of Parliament must be free;
9. That there must be freedom of debate in Parliament;
10. That excessive bail should never be demanded;
11. That juries should be impanelled and returned in every trial;
12. That grants of estates as forfeited, before conviction of the offender, are illegal;
13. That Parliaments should be held frequently.

It concluded that "they (the people of this realm) do claim, demand, and insist upon all and singular the premises, as their undoubted rights and liberties."

The Revolution

If the Revolution did not precisely change the Constitution, or the Laws of Great Britain, yet it brought certain principles into greater prominence; and practically it tended to limit the power of the crown. For example, it has been said that men would address King William in a tone which they would not have dared to adopt to King James, although they were perfectly aware that William was a very great man and an honest, constitutional governor, whilst they knew that James was a small, narrow man, and a tyrant. Undoubtedly the reason was that they felt that, somehow, James had a kind of right which William had not; and it is obvious that this sentiment must have done much to prevent any unlawful exercises of the royal prerogative. As Burke pointed out, the English Whigs of the period of the French Revolution went a little too far when they maintained that the English people had, at the Revolution, proclaimed their right to "cashier" their kings when they chose; but they certainly made it quite clear that a hereditary right to the throne could not be maintained by one who refused to govern in a constitutional manner.

Religion of Liberty

The success of the Revolution arose from the fact that both of the great political parties were in favor of it, whereas the Commonwealth was the work of but one of them. So also Churchmen and Nonconformists were here united and not opposed, as they had been in the old contest between King and Parliament. Measures were speedily taken for the relief of Dissenters by the passing of a Toleration Act, which gave liberty of public worship, on complying with certain formalities, to all except Roman Catholics and Unitarians. An attempt was made to widen the basis of the Established Church so as to include Nonconformists, but this failed. The Archbishop and six other bishops, together with about four hundred of the Clergy, refused to take the oath of allegiance to William, and were deprived. They founded a body, known as the Nonjurors, which existed

for more than a century. The Episcopal clergy in Scotland were roughly handled, and the Scottish Parliament declared Presbyterianism to be the religion of the country.

The end of the Struggle

As was not unnatural, there was, both in Scotland and in Ireland, resistance to the new settlement. In Scotland Dundee might have given the government trouble, but his death at Killiecrankie (July 27, 1689) practically ended the rebellion. The case was more serious in Ireland, as the new king had there not merely a party, but the country generally, against him. The Protestants in the north were chased from their homes and took refuge in Londonderry, which was defended desperately by the citizens against the army of James. The inhabitants were reduced to eating the flesh of dogs; but at last they were relieved (July 30, 1689), and James and his army drew off. However, an Irish Parliament met, and passed an Act annulling all the English confiscations since 1641. It seemed as though Ireland must be conquered over again, and Schomberg was sent with an English army to Carrickfergus. On June 14, 1690, William himself landed at the same place. On July 1, he defeated James at the Battle of the Boyne. By the end of 1691, Ireland was subdued; but its government for many years afterwards forms one of the saddest pages in the history of Great Britain.

WILLIAM CLARK, LL. D.

A CHRISTIAN EVOLUTIONIST — THE LATE PROFESSOR HENRY DRUMMOND

SCIENCE and religious philosophy alike have sustained a loss in the death at Tunbridge Wells, England, on the 11th of March, of Professor Henry Drummond, author of the remarkable book, "Natural Law in the Spiritual World," and other works in the domain of Apologetics. In these days of destructive criticism directed against faith and revealed religion it was gratifying to find a man of Professor Drummond's eminence in science stand forth to speak a word for supernaturalism and the reconciliation of science and religion. The argument he made use of in the thoughtful and captivating book referred to was an ingenious one, and appeared at a critical moment when a materialistic evolution had seemed to remove the underpinning of faith and thrown grave discredit on the whole system of Christian truth. It came moreover with special force, since Professor Drummond's arguments were not only couched in the terminology of science, but made telling use of one of its important departments—that of biology—to illustrate and enforce by analogy the lessons of spiritual things through the operations of natural law.

Perhaps never has secular thought been more impatient than now with the miraculous, and yet never more marked than now has science failed to prove the supernatural out of existence. In the thick of the controversy between belief and unbelief Professor Drummond came opportunely on the scene and sought to show that the miracle was not, as it had been held, an interference with natural law but an extension of it. Nor is this an unreasonable view to take, for why should law stop within what we call the natural sphere. The truth is, many of our intellectual difficulties come of this separating of the two spheres. There would seem to be no real gulf, far less rivalry, between them, and in both the Deity is immanent. The force which gives to man corn and wine and oil today is no less Divine than that which once turned water into wine and fed the multitude in the wilderness. But in the case of a work so widely read as "Natural Law in the Spiritual World" it is hardly necessary to dwell upon Professor Drummond's arguments. We have spoken of them as ingenious, and some have styled them even fanciful; but in the literature of speculative thought dealing with the miraculous we have found few arguments more impressive, if not convincing. Nor in what must be the region of mystery can we say that they have been effectively assailed. This, at least, is some gain at a time when authority and the credentials of belief are everywhere questioned and when criticism is on all sides laying violent hands upon inspiration.

G. M. A.

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V APRIL, 1897 NO. 1

G. MERCER ADAM, EDITOR
MONTGOMERY B. GIBBS, BUSINESS MANAGER

GRECO-TURKISH OUTBREAK IN CRETE

Coercing and dragooning plucky little Greece seems just now to be the safe sport of the European Powers. Of all terrible things threatened by the diplomats and put in force by the respective executives behind them, this joint action or "Concert" of Europe against the Hellenic Kingdom, for seeking to repress Turkish misrule in Crete, appears to us to be the most pitifully undignified and fatuous. It seems to say that the National Health Board of Europe prefers to see the highway of the East still littered and befouled with a mass of Turkish rottenness than allow a small but wholesome sanitary agency to cremate the putrid muck, and so rid the nostrils of Europe of that which has long been a rank offense to it. The official mind will doubtless be gratified at this proof that the governments of Europe are for once in full accord, and that diplomacy has again triumphed in its interposition on behalf of the "sick man," under the pretense of preserving international peace. The lay mind, however, will have another and less smug opinion of the matter.

Thwarted in getting her will in Crete, we cannot help wishing that Greece may yet make it hot for the Turk, and troublesome for the European Concert, in Macedonia. Even at the risk of a continental war we could wish that the little kingdom would remain contumacious, and refuse to leave Cretan Christians and her Hellenic kin on the Island to the tender mercies of Moslem cut-throats, while the Powers continue to talk arrant folly about the "integrity and independence of the Ottoman Empire," and laugh in each other's faces when they solemnly palaver over Cretan autonomy. Under any circumstances, the annexation of Crete by the Hellenic Government would be a most natural and desirable action; while it becomes a Christian duty when inspired by sympathy for her distressed proximate island kin, and heroic when attempted against European opposition and in face of the war-fleets of the Great Powers.

Greece in arms against the whole of Europe, however, would be a rash and possibly suicidal act, though if she has a power like Austria-Hungary, and possibly Italy, secretly behind her, she may be justified in defying coercion, at least until European opinion is more demonstratively in her favor and the Powers are forced to remove their Greek blockade to avert a more serious phase of the ever-disturbing Eastern question. This is the hope for Greece, as well as for the ill-starred Christians in Crete and Armenia, and before the trouble is ended King George, by his determination, may succeed in winning his ends, calamitous as that event would be, by a general European war. What the issue finally will be, it would be premature, indeed almost impossible, to conjecture. Meanwhile, American sympathy does well to go out not only to the plucky little Hellenic Kingdom, but to the Cretan revolutionists, whose reunion and reincorporation with their kindred in the Greek Peninsula every humane heart must sincerely pray will ere long be realized.

* * *

THE OUTGOING AND INCOMING PRESIDENTS

The brief armistice which breaks the monotony of our quadrennial political contests has again come round, and the national troops, accompanied by a great concourse of camp-followers and citizens, have lately gathered at the Capital to look upon a change of party commanders. The figure would perhaps be more apt were we to speak of the event as a capitulation of the national citadel, and the accompanying pageant as the marching out of the surrendering garrison and the marching in of the victorious besiegers. If a capitulation, however, it has been brought about and assented to by the great mass of our people, and the victory on this occasion has happily not been that of one party exclusively, still less

is it due to the grace of the wire-puller or the Boss. This is a matter for public thankfulness, and must be rejoiced in by all who have the weal of the country at heart, and by those, especially, whose party allegiance is subordinate to allegiance to the nation, and who desire, and desire at all times, the public good. In this weakening, for higher ends, of the power, for the time being, of organized party we have another and assuring proof that the common sense and rectitude of the people are to be trusted in times of anxiety and national peril.

A word or two may here be in place of the passing from his high office of the late incumbent of the Presidential chair. Whatever may be said of some executive acts during the régime that has just come to a close, Mr. Cleveland has undoubtedly won approval for much that has happened under his forceful administration. Knowing the record as well as the character of the man, we were of course prepared to find him take his own resolute way in most questions with which he has had to deal, and that with characteristic opinionativeness and independence. This, however, has not led him far wrong, though it occasionally may have been embarrassing to his cabinet and perplexing to the ordinary type of politician, who would like to see the President a mere puppet in the hands of the party leaders, and without moral fibre, force of will, still less sagacity carried at times to the measure of audacity.

His capacity for work has been great, and the motives that have actuated him, though in some instances impugnable, have manifestly been righteous and honest. While his own resourcefulness and independence have kept him, perhaps inadvisedly, aloof from his party, and made him impatient with its dictation and discipline, it cannot be denied that he has used his power, in the main, for good and effective ends and carried with credit the government on his own broad shoulders.

The new President takes his place after a noisy though necessary and gratifying struggle, and with a measure of public approval as remarkable as unhappily it is rare. As yet, while but fresh in his seat, it would be hazardous to forecast the character of his administrative régime and the success or otherwise of his handling of the great problems which confront the nation, and with which he and his advisers have presently to deal. And yet President McKinley in public life is not an untried man, while his career, qualities and temperament are all known. Much is hoped from a man who, like him, is undoubtedly well-meaning and honest, and though not brilliant has solid gifts and conspicuous common sense. He has moreover the advantage of a strong and capable body of advisers, in whom the people are disposed to have confidence. In his inaugural he has made a good beginning, for the address on the whole was admirable, being timely, sincere, and on vital questions, assuring, while it was more than ordinarily free from either buncombe or commonplaces. Of the financial situation he took a statesmanlike view of matters, and, while declaring his own adherence to the gold standard, wisely favored a commission to revise the currency. Of foreign affairs he spoke discreetly, righteously endorsing the principle of arbitration and giving no encouragement to filibustering or any policy of aggression.

The good sense of the nation will commend what the President has to say of the imperative need of economy in every branch of the government service, while it will be sure to sustain him in his decision to rigidly respect the rules that now happily govern applications for positions in the Civil Service. One thing we can devoutly wish Mr. McKinley, surrounded as he must be by thousands of hungry placemen and aspirants to office, is freedom from the officious intrusion of politicians, anxious, if not for office themselves, for places for their friends. The demands upon the President's time and attention by such intrusions have become a serious evil, and the remedy should be a drastic if not an undemocratic one — polite refusal in all instances to be personally interviewed. No man, it has been said, can be a statesman who does not think; no man can think without time for thinking; and no man can have time for thinking who is exposed through the whole day to the irruptions of all whom private interest, fussy self-importance, or silly curiosity may bring to his door. Such license is called democratic; it might be more justly called the very reverse, since it is an unwarrantable encroachment of personal objects upon time which belongs to the people.

THE McKINLEY CABINET

With the necessity, which seems of recent years to have been forced upon the Executive head of the nation, of selecting men for positions in the Cabinet from geographical areas, as well as from members of his own party stripe, it is admittedly difficult to secure trained statesmen or even men of the requisite experience and mental calibre for high office. No doubt Mr. McKinley must have felt, though he appears to have successfully overcome, this difficulty. The men he has gathered about him as advisers are, in an eminent degree and in their several capacities, men of exceptional excellence. In their respective sections each has made a high record for himself, while some of them — notably Senator Sherman — have enjoyed a continental reputation. They are known, moreover to be practical men — strong, conscientious, sagacious, and conservative. Each by his training or experience has well fitted himself to undertake the responsibilities of a cabinet counsellor; while in the matter of years each is mature enough to have gained wisdom and a stable judgment.

Mr. Sherman, the Nestor of politics, has already a record in the public service, and is known to be an astute as well as an experienced statesman, whose judgment at the council board and duties in the Secretaryship of State, will be of advantage to Mr. McKinley and the nation. From his predecessor in office he will have been handed over not a few problems of statecraft, the solution of which will call for calm deliberation, well-balanced powers of mind, and the sanest and shrewdest judgment.

The unanimity with which Mr. Lyman J. Gage's appointment to the Secretaryship of the Treasury was received, by all sections of the country, augurs well for the able, safe and efficient administration of his important office. As a financier, few men have come better equipped than he to the control of a department of the National Goverment which to-day, more than ever in the history of the country, calls for large-mindedness, sound judgment, and first-rate talent.

The advent of ex-Governor Russell Alger, of Michigan, to the Secretaryship of War, is confidently hailed by those who know and commend his career as a soldier. As a military man, his record is a high one, and at the close of the war he retired with the brevet rank of Major-General, conferred "for gallant and meritorious service." Since then, though pursuing the avocations of civil life as a wealthy lumberman, he has been conspicuously identified with the Grand Army of the Republic. For a number of years he has served his native State in the capacity of Governor.

The new Secretary of the Navy, Mr. John D. Long, of Massachusetts, has also had experience as a State Governor, and has represented with ability his own State in three separate Congresses. In Massachusetts he is deemed one of the foremost and most useful citizens. Besides his talent as a lawyer, he has the attainments of a scholar and the gifts of a littérateur.

Judge McKenna, of California, who succeeds to the Attorney-Generalship, comes to it from a seat in the U. S. Circuit Court of his State. He also has served in Congress and was associated with the President in the formulation of the McKinley tariff. In him the President has a fast friend, and the country finds for the office an able lawyer.

Mr. Gary, of Maryland, comes to his duties of Postmaster-General with the experience of a man of business who has been at the head of a number of large and successful enterprises. He has never, we believe, held political office, though on several occasions he has been a candidate both for Congress and the Governorship of his State.

The new Secretary of the Interior, Mr. Cornelius N. Bliss, is another representative of large commercial interests in the Cabinet, whose experience at the present juncture can hardly fail to profit the nation. Mr. Bliss comes from New York, where he was the head of a large dry-goods business, and has the reputation of being a man of integrity and honor.

Mr. Wilson, of Iowa, who succeeds Secretary Morton in the control of the Department of Agriculture, comes to the post from a professorship in the Ames (Iowa) Agricultural College, and is known as a practical as well as a theoretical farmer. He is well versed in politics, since he has been a member for six years of the legislature of his State and has sat in three Congresses. In him the President has a valuable addition to the Cabinet.

OUR NEW AMBASSADORS

With a new government at Washington, usage requires the recall from foreign embassies of the Ambassadors who have represented the nation under the former administration. In the case of Britain and France, new appointments have been made to represent the United States at the Court of St. James and the Legation at Paris. Colonel John Hay takes the place of Mr. Bayard, and General Horace Porter that of Mr. Eustis. Already the English people, through the London journals, have given expression to their gratification that a man of letters from this side the Atlantic is again about to be sent to the United States Embassy in London. Regret, of course, is felt at the withdrawal of Mr. Bayard, and courteous things are said, and said sincerely and warmly, of the pleasant relations that have existed between the English people and the retiring ambassador, and the pleasure they have experienced, in social as well as in diplomatic circles, from contact with so delightful a personality as Mr. Bayard.

How far Colonel Hay will succeed in further cementing the bond of relationship and friendship between the countries remains to be seen. Already a cordial English hand is extended to him, and the hope is entertained that England will find in the author of "Jim Bludso," and other western literary audacities, a diplomat no less acceptable to them than the retiring minister or the author of the "Biglow Papers." Nor does the prospect exist that they will be disappointed, since the functions of a diplomatic representative of this country in England are more social than political, and Colonel Hay is sufficient of a man of the world as well as a man of letters to make himself *persona grata* to John Bull, his wife and his daughters. In the duties of his office, Colonel Hay has the further advantage of having had considerable experience in foreign embassies, and he carries with him to the English mission the prestige of social as well as literary and political success. No less confidently can we bespeak for General Porter a hearty reception at Paris, where his character and accomplishments are widely known, in Parisian as well as in American circles. From a political point of view his nomination to the post is a happy as well as a fitting one.

THE PHILANTHROPIES OF AN AGGRESSIVE COLONIZING POWER

Many flings have of recent years been made at England for the grasping character of her foreign conquests and the persistent aggression of her arms and her people. To such charges any active colonizing power is in these days open when the last waste-places of the earth are being snatched from nature and subjected to the raids of civilization. Before heedless censors pass judgment upon England, of all sinners in this respect, the obverse side of the picture should, however, be looked at, to see what the regions annexed by her arms gain by the surrender. Who, for instance, doubts what Egypt gains, financially and morally, from the occupation by England, or what she receives from England's handling of her finances?

Nor have the multitudinous subject races of India, in that vast empire of England's conquering, any reason to regret coming under the protection of her arms, and so shielding themselves from periodic conquest and oppression. Nor has India to thank her conqueror only for the wisdom and benignity of her rule. To-day, two millions of dollars, raised in England in the past few months for the famine-stricken hordes of the distant dependency of the Crown, are at the disposal of her almoners on the spot; while the government of India is taxing its resources to the utmost to assist those stricken with the plague, and, by its expenditures on an elaborate system of irrigation, to prevent a recurrence of the famine.

Nor is English philanthropy less grudging at home in responding to the calls of suffering need, or less unstinting in the doling out of large charity systematically and recurrently. The present Jubilee Year—the sixtieth of the Queen's reign—is to be made a red-letter one for the London hospitals and charities through the princely gifts of her people, to supplement the endowments of every one of the city's charitable institutions. In no country or age, indeed, has more been done for charity's sake than is now being done, and done on a colossal scale, by the British nation for the alleviation of suffering and the satisfying of other claims in humanity's name. Such deeds may well be placed to her credit when "the mother of nations" is arraigned for her territorial aggressions.

MR. ILES ON "THE ART OF LARGE GIVING"

Into the Millennium of practical Christianity we can no more leap than we can leap into that which the Socialists hold before our visions as the goal of their hopes in the sphere of politics. The process of educating wealth up to the ideal state when the richer brother shall share with the poorer one, and the man with two coats shall give to him who has none, is necessarily, and perforce, a slow one. Much faster, however, must be the change in the social conditions of the world did our millionaires take home the lesson which Mr. George Iles enforces in his valuable paper in the current Century Magazine, on "The Art of Large Giving." The lesson is that, in a thousand ways, many of which are pointed out by Mr. Iles, superfluity to-day can do more for mankind than ever before, and that the fields for the exercise of beneficence were never so inviting as they are now, or more full of the promise of helpful and gratifying results. The article referred to is worthy of the widest circulation, since rarely have we met a writer with the faculty of compiling statistics who possesses Mr. Iles's ability and knack in utilizing and applying them.

The purpose the writer has had in view is not only to stimulate intelligently the art of munificent giving, but to show, in the history of institutions in this country that have been organized or largely developed by benevolent founders, the resultant practical and beneficent effects. He therefore enumerates, besides the universities, colleges, libraries, hospitals and other eleemosynary and educational institutions, those that have made ample return to their donors for the benefactions received by them, in the varied fields of discovery and research, as well as those that have given technical training to the artisan and the means of education, art culture, and recreation to the masses. The article is rich in material for thought, while its statistics must plead powerfully for extending the area and making more general the habit of large giving. "In promoting the culture of the sense of social right and duty, the large giver," aptly observes Mr. Iles, "strikes at the root of both want and surplusage, and wins for himself the worthiest remembrance among men."

MR. GLADSTONE ON THE EASTERN CRISIS

Greece, the little but gallant kingdom, has at last an ally in her spirited refusal to stand by and see the Christian communities of Crete, who are her kin, butchered by the Moslem fanatics who do the bidding of the "Assassin" of the East. The ally is not one of the Great Powers that had impatiently detached itself from the paltering "European Concert," but the redoubtable Mr. Gladstone, who has once more put his visor down and ridden forth, lance in hand, to do battle for a humane and righteous cause. Since penning the article on the affairs of Crete with which this department opens in the present number of SELF CULTURE, the text is cabled of Mr. Gladstone's letter to the Duke of Westminster, in which the "Grand Old Man" addresses his countrymen in defense of the attitude taken by the Hellenic Kingdom and vigorously champions her cause against the "Concert of Europe." Anew is the voice of the great Liberal chieftain uplifted that had thundered at Bulgarian atrocities and waxed indignant over the massacre of the Armenians. Once more does its note ring out, calling for action against the Turk and denouncing the folly of England's trailing at the heels of the Concert of the Powers, which does nothing but talk, subdued to inaction and helplessness by jealousy of each other.

The moral force of Mr. Gladstone's Letter will at the present crisis of affairs be felt throughout Christendom; and it is impossible that his ringing words can fail to encourage every heart and stiffen every arm in heroic little Greece. The action or rather non-action of the Powers, is due, he affirms, not to a common accord, but to a want of it, and says that the concert of Europe has come to mean "the concealment of dissents, the lapse into generalities, and the settling down upon negations at junctures when duty loudly calls for positive action." In another passage, he speaks of this agreement between the Powers as a "concert of miserable poltroonery" and urges an appeal from "the official to the personal conscience." Above all, he makes appeal to the people, and pours scorn upon those who would treat Greece as "a criminal and disturber," and tolerate the infliction of punishment upon her for her timely and plucky interference in Crete.

EVENTS OF THE MONTH

Friday, February 5.—The New York legislative committee appointed to investigate trusts began its work by examining officers of the sugar trust and others as witnesses....Sir R. J. Cartwright, Canadian minister of trade, and Mr. L. H. Davies, minister of marine and fisheries, are in Washington in the interest of closer trade relations between the United States and Canada....In the British house of commons Sir Michael Hicks-Beach, chancellor of the exchequer, moved a resolution granting £798,000 to meet the total cost of the Anglo-Egyptian expedition to Dongola.

Saturday, February 6.—The president signed an order reducing the number of pension agencies from eighteen to nine; this will result in a saving of $150,000 per year... Great excitement was caused in France by Sir Michael Hicks-Beach's speech on the Egyptian question. ....Dr. Koch, the German bacteriologist, writes from South Africa that he has discovered a serum which will lessen the ravages of rinderpest.... British warships have been ordered to Crete.

Sunday, February 7.—The Spanish minister at Washington says the reforms granted to Cuba are of the most liberal character....An anti-trust law has been passed by the Alabama legislature....The declaration of Sir Michael Hicks-Beach that England will continue her occupation of Egypt, has produced irritation in France, but is received well in Germany.

Monday, February 8.—Chicago business men, after talking with Major McKinley, report that the president-elect is in favor of a department of commerce and industry with a tariff bureau ... The Royal Geographical Society gave a reception to Dr. Nansen in London; on behalf of the society the Prince of Wales presented a gold medal to the explorer.

Tuesday, February 9.—Congressmen in the States affected protest against the president's order abolishing nine pension agencies... The National wool growers' association met in Washington and formulated demands for an increased duty on wool....Advices from Cuba indicate that the Cubans have no intention of accepting the reforms offered by Spain....A motion to disestablish and disendow the Church of England was made by a liberal in Parliament; it was rejected by a vote of 204 to 86.

Wednesday, February 10.—The fortifications appropriations bill, completed by the house committee, carries $9,178,325....A delegation of farmers of Canada West waited upon the Dominion tariff commission, at Winnipeg, and advocated reciprocity with the United States and free trade....Prince George of Greece, sailed from Athens with the Greek torpedo flotilla with orders from the King to prevent, by every means possible, the landing of any Turkish troops on the Island of Crete.

Thursday, February 11.—The house committee on appropriations finished the sundry civil appropriation bill for the next fiscal year; the bill carries a total of $50,664,743....President Cleveland's last formal reception at the White House was given to the army, navy, and marine corps....The Republican members of the ways and means committee decided to restore the McKinley rates on lead ore....Greece has notified the powers that ties of race and religion compel her to intervene in behalf of the oppressed and outraged Christians in Crete....The Royal Societies club of London gave a dinner to Mr. Bayard "upon his retirement from the court of St. James"....The Spanish Government has accepted Miss Clara Barton's offer of the services of the Red Cross for relief work in Cuba.

Friday, February 12.—A call has been issued for a preliminary conference of representatives of the boards of agriculture of the several States, to be held in Washington, D. C., March 5, to arrange for a representative convention of the farmers in the spring....The powers have been assured that Turkey will not send reinforcements to Crete; the Christians, after a prolonged fight, have driven the Moslems into Canea, and are now holding the suburbs of the town; thirteen villages have been burned.... Captain-General Weyler has donated 2,000,000 francs out of his private funds toward meeting the expenses of the government in prosecuting the campaign in Cuba.

Saturday, February 13.—John Palmer visited the president-elect in General Stewart L. Woodford's interest; Colonel Albert Clark, of Boston, is said to be slated for assistant secretary of the treasury....The Porte declared his intention to attack Greece in Thessaly unless the powers restrained Greece in Crete.

Sunday, February 14.—James Wilson, of Iowa, who will be the next secretary of agriculture, will use his influence to encourage the beet-sugar industry....Hon. John Randolph Tucker of Lexington, Va., is dead....William P. St. John, the principal champion in the East of the cause of free silver, died in New York....The Christians occupied the heights above Canea, the capital of Crete, and bombarded the town; the Turks replied from the fort.

Monday, February 15.—The United States treasury deficiency for the first half of February is $3,858,500, and for the seven and a half months of the current fiscal year to date, $47,713,300....Spanish troops under General Aldave are reported to have defeated the insurgents in the Province of Santa Clara, Cuba.... United States Senator Wolcott arrived in Berlin and conferred with leading German bimetallists.

Tuesday, February 16.—In the Senate Mr. Chandler speaks for the double monetary standard; the bankruptcy bill is taken up....The House transacts miscellaneous business; sustains the president's veto of a pension bill....The four hundredth anniversary of the birth of Philip Melanchthon is observed by many churches.... Turkey is preparing six vessels of war for sea service....Cecil Rhodes testifies before a parliamentary committee regarding the Transvaal raid.

Wednesday, February 17.—In the Senate the final conference report on the bill to restrict immigration is adopted by a vote of 34 to 31.... In the house a stand in favor of economy in pension legislation is taken....Sharp fighting, with severe losses to both Spaniards and rebels, is reported from Cuba....It is rumored in Madrid that a ministerial crisis is impending and that Sagasta will succeed Prime Minister Canovas.

Thursday, February 18.—The Senate considers the arbitration treaty, confirms several nominations, and passes a bill providing for a new postal card system....Postmaster-General Wilson accepts the presidency of Washington and Lee University....Two thousand Moslems are reported massacred at Sitia, in the island of Crete; Turkish and Grecian troops are steadily concentrating on the Thessaly frontier, and a serious collision is imminent....John Burns attacks William Waldorf Astor in the House of Commons.

Friday, February 19.—The Senate discusses the arbitration treaty for seven and one-half hours; refuses to postpone consideration until after March 4....The House takes up the deficiency appropriation bill....McKinley's offer of a cabinet portfolio to James A. Gary, of Maryland, is accepted.....Fighting between Christians and Moslems in Crete continues; Lord Salisbury sends a note to the powers favoring the granting of autonomy to Crete; British warships prevent the landing of Greek troops on the island....The Canadian cabinet fixes March 25 for the opening of parliament....A reduction of ten per cent. in miner's wages is reported from the ore mines at Iron Mountain, Mich.

Saturday, February 20.—The President has referred the Mining Bill to Secretary Carlisle for an expression of opinion on the merits of its provisions....The Senate will investigate the Perrine land grant....Dr. Richard Ruiz, a naturalized American citizen, died recently in prison in Cuba....The united squadrons of the Great Powers at Crete bombard an insurgent camp outside of Canea.

Sunday, February 21.—Governor Bushnell, of Ohio, announced that when Senator Sherman resigns to enter President McKinley's Cabinet, he will appoint to succeed him Hon. Marcus A. Hanna....A daughter is born to General and Mrs. Benjamin Harrison.

Monday, February 22.—The President issued thirteen executive orders, establishing as many additional forest reservations, containing an aggregate area of 21,379,840 acres....The Continental Congress of the National Society of the Daughters of the American Revolution was opened in Washington, D. C....Washington's birthday was observed with honors in London, Paris, and Berlin....The British have captured Benin City and the native King is a fugitive.... The bombardment of the insurgents at Canea by the fleets of the European Powers has caused intense excitement and indignation at Athens. The matter was debated in the British House of of Commons and in the German Reichstag, and stocks were unfavorably affected.

Tuesday, February 23.—The leaders of the silver Republicans have issued an address urging organization in every State and Territory and the appointment of a provisional national committee which will meet in June to make arrangements for a national convention....The report of the death of Dr. William Steinitz, the famous chess-player, is without foundation.... Cecil Rhodes appeared again before the committee appointed by the British parliament to investigate the Transvaal raid.

Wednesday, February 24.—The President has issued a proclamation convening the senate in session on March 4 to receive communications from President McKinley....A law making all contracts payable in gold non-collectable and void, passed both branches of the Oklahoma legislature....The powers have ordered Greece to evacuate Crete at once; this is the result of a proposal made by Russia that the powers act promptly in the pacification of Crete.

Thursday, February 25.—The State Bank, of Ewing, Neb., has suspended....Representative wool men from all parts of the country met in New York yesterday....Lord Salisbury announced in the house of lords that Great Britain had proposed autonomy for Crete, the island to remain a portion of the Turkish empire.

Friday, February 26.—A Canton dispatch says that Colonel J. J. McCook, of New York, has refused to accept any place in Mr. McKinley's cabinet but that of attorney-general.... The Venezuelan boundary commission held what was probably its last meeting and made arrangements for printing the vast mass of information it has accumulated.....The Missouri House has adopted resolutions denouncing the policy of the Federal administration as to affairs in Cuba....A dispatch received in London yesterday from Athens, Greece, stated that King George has intimated his intention to accept the demands of the powers.

Saturday, February 27.—At the British embassy at Washington, the Spanish draft of the Anglo-Venezuelan treaty was signed by Sir Julian Pauncefote and Sefior Andrade....The Venezuela boundary commission made its report to the president, thus formally terminating its existence ...It is reported that King George of Greece will abdicate in favor of his eldest son, the Crown Prince Constantine....The governments of Russia and Japan are reported to have signed a treaty practically constituting a joint protectorate over Corea....The consent of France to take part in an international monetary conference is said to have been secured by Senator Wolcott before leaving Europe.

Sunday, February 28.—William J. Bryan was in Washington last night and conferred with a number of the silver senators....The German foreign office has received a telegram from Lord Salisbury conveying the purport of the ultimatum to Greece which has been proposed by the powers, and will be presented by them jointly to the Hellenic government....A number of Cretan deputies presented a memorial to King George stating that they had decided not to accept autonomy, but to continue their struggle to realize union with Greece....A dispatch from Constantinople says that many officials there declare that Turkey will never give her consent to the scheme of the powers to establish autonomous government in Crete.

Monday, March 1.—President-elect McKinley left Canton for Washington....The receipts of the government during February were $24,400,997, and the disbursements $28,796,056, leaving a deficit of $4,395,059....The British government announced in the house of commons that England would not interfere in Cuba....The town of Condano, on the island of Crete, was captured by the Greeks....The Japanese government has decided to adopt the gold standard at a ratio of 32 1-3 to 1....The syndicate appointed by Cambridge (England) university to consider the

question of granting degrees to women recommends that the university be empowered to grant such degrees.

Tuesday, March 2.—The South Carolina legislature passed an income-tax bill....President Cleveland sent to the house a veto of the immigration bill....The collective note of the powers concerning Crete was presented to the Greek and Turkish governments; it provides that Crete shall be converted into an autonomous state under the suzerainty of Turkey, and demands that the Greek land and naval forces be withdrawn within six days....The lord mayor of London gave a dinner last night in honor of Ambassador Bayard; three hundred leading men of England attended.

Wednesday, March 3.—President-elect McKinley paid a formal visit to the president at the White House in the morning, and the president at noon returned the call....Many diplomatic officers have already sent in their resignations so as to relieve the incoming president from any embarrassment....The steamer "Laurada" escaped the revenue officers at New York, and sailed for Cuba with munitions of war....It is stated in Havana that orders have been given Spanish authorities in Cuba to try, with all possible haste all Americans now in jail, and to expel from the island those found guilty....Advices received in London from Athens indicate that Greece will refuse to comply with the demand of the powers for the evacuation of Crete.

Thursday, March 4.—Hon. William McKinley, of Ohio, was inaugurated as President of the United States....President Cleveland in the morning signed the fortifications, post-office, naval, and District of Columbia appropriations, but did not approve the sundry civil, Indian, and agricultural appropriation bills, which thus failed....Vice-president Hobart took the oath of office in the senate and delivered an address. ... Senator Wolcott arrived in New York....J. Addison Porter took the oath of office as secretary to the President, to succeed Henry G. Thurber....The Spanish cabinet has decided to ask for an extra credit for the purpose of fitting out six additional warships....The reserves of 1891, 1890, 1889, and 1888 have been summoned to join the colors by the Greek government.... Fighting is reported in the vicinity of all the coast towns in Crete....The total number of cases of bubonic plague in Bombay up to date is 8,383, of which 6,979 proved fatal.

Friday, March 5.—President McKinley sent his cabinet nominations to the senate and they were promptly confirmed....President McKinley spent his first day in the White House principally in receiving callers, many prominent people coming to offer their congratulations; ex-Congressman Bellamy Storer, of Ohio, has been appointed first assistant secretary of state.... There is no sign of King George or the Greek government receding from the position they have taken, and warlike preparations are being carried on with feverish activity.

Saturday, March 6.—President McKinley has issued a proclamation convening the Fifty-fifth congress in extra session on March 15....The members of President McKinley's cabinet were sworn in and took charge of their respective departments....War preparations in Greece continue on an undiminished scale....Emperor William's declaration that socialism, which he described as "that pest which infects our whole nation," must be uprooted, has caused a sensation throughout Germany and elicited defiant utterances from the socialist press.

Sunday, March 7.—A caucus of house Democrats has been called for March 13....Ballington Booth's Volunteers of America began a celebration of the first anniversary of their organization....A meeting in Hyde Park, London, to express sympathy for Greece and Crete was attended by fifteen thousand people; the weather was unfavorable....President McKinley's utterances on foreign affairs in his inaugural address are well received in Russia.

Monday, March 8.—Mrs. Henry Ward Beecher died at Stamford, Conn., aged 85... Greece is prepared to recognize the temporary suzerainty of the sultan, to withdraw her fleet completely, and to place the Greek army in command of any military representative of the powers senior in rank to Colonel Vassos, for restoring order in the island, if the powers are willing ultimately to leave the decision as to the fate of Crete in the hands of the people.

Tuesday, March 9.—President McKinley, it is said, will make an effort to promote international bimetallism through our diplomatic representatives abroad....The first regular cabinet meeting of the new administration was held....The ways and means committee is said to have agreed upon a new sugar schedule fixing the duty at 1⅝ cents a pound maximum, and 1½ cents minimum....Dispatches from Rio de Janeiro say the outbreak in Bahia, Brazil, is becoming more serious.

Wednesday, March 10.—The Democratic State convention of Rhode Island nominated Daniel T. Church for governor....The state department is informed that the Persian government has prohibited the exportation of rice, wheat, barley, and other cereals ...The great strike of the mine workers of Leadville, Col., in progress since June 19 last, has been called off unconditionally by the miners' union....The leading London bankers now express their belief that there will be no war in the East, and a general feeling of confidence is returning.

Thursday, March 11.—H. Clay Evans, a prominent Tennessee politician, has been tendered and accepted the office of commissioner of pensions....Wm. J. Bryan made a speech to the Tennessee legislature at Nashville ...The McKinley schedule on wools and woolens was substantially adopted by the Republican majority of the ways and means committee....The funeral of Mrs. Henry Ward Beecher took place from Plymouth Church, Brooklyn....Greece has informed France and Great Britain that she is willing to place the Greek troops in Crete under the direction of the powers, and also to abandon her proposal for a Cretan plebiscite and leave the Cretan chamber of deputies to pronounce in favor of autonomy or union with Greece as that body may elect....The University of Cambridge conferred the degree of LL.D. upon Ambassador Bayard.

Friday, March 12.—There has been a decrease of immigration during the past seven months, compared with the same period of last year, of 45,525....The navy department has invited bids for supplying armor for the three new battleships.

INQUIRIES ANSWERED

Will you kindly state what Russia's attitude is towards the Eastern Question, and what is the drift of her policy respecting Turkey? Also please say how Russia's course would affect this country, if at all.

Russia may be said to be almost the one European Power to be reckoned with in the consideration of the Eastern Question. She it is who has hitherto balked the solution by diplomacy of the intolerable situation in Turkey. But this result is not to be wondered at if one recalls the events preceding the Crimean War, and the mistaken course (recently admitted to be so by Lord Salisbury) of England, France and Italy in then upholding Ottoman rule and checking that English bogey of the past fifty years—Russian aggression the East. Since that Period, Russia has taken, with imperial hauteur, her own line, while Turkey, under the coddling of the Powers who then fought for her has continually gone from bad to worse until she is to-day, save for the promise of "Young Turkey," a mass of rottenness.

Since 1854 Russophobia in England has been kept alive by fear of Russian machinations in Afghanistan, and of Muscovite encroachment on the Indian Empire. This attitude of England has further alienated Russia and deepened her determination to pursue her own course without reference to the susceptibilities of the European Powers; and we can hardly doubt that she has been wise in her policy and astute in biding her time. Meanwhile she has of course felt restive in being shut into the Black Sea and denied access through the Dardanelles into the Mediterranean. She has, however, not been idle, but has largely extended the area of her vast empire in every other possible direction—in the Caucasus, in the Trans-Caspian provinces, and in the region of the Amoor, to the waters even of the Northern Pacific.

This now colossal Power could to-day afford to stand outside Western diplomacy and, if need be, defy the European concert. We can hardly think, however, that she will do so when the time suits her for action. She no doubt still entertains the ambition of one day holding the city of Constantine in her own hands, and obtaining passage for her fleet through the Dardanelles. When she can, she will doubtless move in this direction. That she may gain her wish in this respect must be the desire of every dispassionate, unbiassed person that is not bitten by Russophobia and enamored of the Turk. How the Russian wish is to be gratified it would at present be difficult to say, though it may come by the dethronement of the Sultan and the dismemberment of his empire and its division among the various European nations. It may even come as the result of a common agreement among the great powers to permit Russia to govern Turkey under the direction of an international commission, and to administer its financial affairs as England administers those of Egypt. It may come, and is more likely to come now, as the result of the present action of Greece in Crete. However it comes, Russian rule, autocratic though it may be, must be vastly preferable to the horrors and weaknesses of Ottoman dominion; nor can religion suffer in exchanging Moslemism for the dominion of the Greek Church.

American interests are in no way likely to be affected by Russia's action at Constantinople, since she is sure to treat American missionaries in Armenia as she would treat all Christian subjects in the Porte's dominions. Our country's interests are more likely to be affected, though without prejudice, by Russia's advent on the Pacific.

Will you please inform me to whom Carlyle, in his "French Revolution," refers when speaking of Dame de Nesle? She is not to be found, so far as I can discover, in any historical source in English. I thoroughly enjoy reading SELF CULTURE.

Dame de Nesle, referred to by Carlyle in his "French Revolution," was one of the numerous mistresses of Louis XV. She was the daughter of Louis, Marquis de Nesle, and was educated in the convent of Port-Royal, a Cistercian nunnery near Paris. She was twenty-three years of age when she conceived the idea of supplanting her sister, Mme. de Mailly, in the affections of Louis XV. Dame de Nesle, though possessed of charming manners, brilliant wit and vivacity, was compelled to be content with sharing the favors of the fickle Monarch with not only her sister, but with other ladies of the corrupt, though splendid court.

After a period of residence at the court of France, she was hastily and secretly married to M. de Vintimille, a newly appointed Parisian official, who felt greatly honored at having for his wife "a favorite of the King." On the 8th of September, 1741, she gave birth to a son, and died the following day. It was rumored throughout Paris that she was poisoned, and her body was held for post-mortem examination, but the details of the affair were kept secret by Louis XV. The scandal was emphasized by the fact

that one hour after the death of Madame de Vintimille, the priest who attended her and received her last confession, died also, and the bodies of both were so repulsively swollen and exhaled such offensive odor that attendants were compelled to transport them from the chateau immediately.

Is there warrant for the tradition that two men, respectively named Wells and McComas, killed the British General Ross, in 1814, at the battle of North Point, near Baltimore, Md.?

General Ross, Commander-in-Chief of the British forces, was killed just before the battle of North Point, Sept. 12th, 1814, by two riflemen from the forces of General Stricker, who commanded the American Volunteers and Militia. Accounts of the action do not record the names of those who fired the shots. The account of that part of the battle in Perkins' "History of the War of 1812," is as follows:

"General Ross determined to attempt an attack on Baltimore. He assembled his troops at North Point, fourteen miles below the city, and at seven o'clock in the morning took up the line of march — the 41st Regiment in advance, followed by eight pieces of artillery, next a second brigade, then the sailors, and last, the third brigade. The march of the main body was preceded by advanced patrols. General Ross, with a reconnoitering party, was half a mile in advance of the main body. On approaching the American lines, just as he reached Long Log Lane, he was shot through the breast by two riflemen. He fell back into the arms of his aide-de-camp and died in a few minutes. By this event the command devolved on Colonel Brook of the 44th." It was Major-General (Robert) Ross who defeated General Winder at Bladensburg, and, advancing upon Washington, burned the Capitol and other public buildings — an act of pure vandalism.

Will you please inform me what may be considered the three most important discoveries of the century? Also, kindly state what writer has probably exercised the greatest influence in the same period.

Your first question is vague, in not indicating the department of science in which you desire information. See the reply published in SELF CULTURE for October, 1896 (page 76), respecting the most useful invention of the last hundred years. Any reply we could specifically make to you would be but the expression of an individual and private judgment. As such we would hazard the opinion that the three most important discoveries of this century are:

1. The invention of the steam engine.
2. The discovery and utilization of electricity.
3. The Bessemer method of making steel.

In answer to your second inquiry we would suggest the name of Charles Darwin, the evolutionist and naturalist, and author of that epoch-making book, "The Origin of Species by Means of Natural Selection," as the writer who has probably exercised the greatest influence on the thought of the latter half of the century.

In the field of religious philosophy and historical and critical thought, the names of Carlyle, Cardinal Newman, and Matthew Arnold may be mentioned.

Will you kindly state if Samson, in the Bible narrative, was guilty of suicide, or what are we to understand was the lesson of his life? Also, please advise me what studies a young man should pursue in the Encyclopædia Britannica.

The Biblical character, Samson, who judged Israel, must be said in one sense to be a suicide, since he died by his own act while bringing doom upon the Philistines, who, at his era, were the oppressors of his people. But suicide was not his motive in throwing down the supporting pillars in the temple devoted to the feast of Dagon. His motive was revenge and triumph over his enemies, as we see in Milton's sacred drama, "Samson Agonistes." Underlying the story there is a moral, the point of which perhaps is the sin of relapsing into folly, such as marked Samson's youth, after a period of twenty years' useful manhood as a judge of his people. Through his passion for the Philistine woman he nevertheless became the instrument of divine punishment on Israel's enemies, the Philistines.

In reply to your inquiry as to courses of reading, we would recommend you to consult Dr. Baldwin's "Guide to Systematic Readings in the Encyclopædia Britannica." See especially the chapters on Home Readings in History, Biography, Science, or those dealing with the practical sciences.

Please give me some information in regard to the early colonial policy of Spain.

You will find in vol. VI., pp. 158–159, of the Encyclopædia Britannica some explanation of the colonial policy of Spain, and that of other European countries, such as Portugal, France, Holland, and England. From the article you will see that Spain's colonial policy was, in the first place, a monstrously cruel one, and, in the second place, it was irrational and antiquated. It was the latter because the Spanish came to the Western Continent actuated purely by their greed for gold. They were in no sense a colonizing people. Wherever they

went they found wealth ready made for them. They had only to put out their hands and take it. They rarely, moreover, went beyond the limits of the civilization they supplanted, and never attempted, like the Teutonic colonists, to penetrate the wilderness or subdue the ruggedness of nature. The Spanish hidalgo was thus both idle and domineering, and his life was even more stupid and monotonous than that of his countryman of the same rank at home.

Another disadvantage of the Spanish colonial system was its limiting the trade of America not only to its own subjects, but for a long time to a single port in Spain. Seville was at first the only port of embarkation for the Indies, but the inconvenience of its situation at length caused the privilege to be extended to Cadiz. Spain thus saw only too late that by opening all her ports to the American trade she might effectually profit by her colonial possessions. Her original system, however, was obstinately adhered to for 200 years, the consequence being that in the end she was weakened rather than strengthened by her American possessions. In time her colonial trade became the smallest and least remunerative of that of the more enterprising European nations. Among the natives of South and Central America the traditions of the early cruel conquest by the Spanish, and the hardships to which they were subjected by their European masters, have always operated against the success of Spanish commerce. The same administrative folly has characterized Spain up to the present day, as we see in the case of Cuba and the Philippine Islands.

Be good enough to give me, through your valuable magazine, some account of the Ostend Manifesto.

In 1852, France and Great Britain, fearful of the filibustering expeditions against Cuba, and the possible future favor of the United States toward such expeditions, suggested a tripartite convention in which each should disclaim all intention to obtain possession of Cuba and should discountenance such intention by another power. On October 9, 1854, the American ministers to Great Britain, France and Spain, James Buchanan, John Y. Mason, and Pierre Soulé, met at Ostend and drew up what is called the "Ostend Manifesto." This declared that a sale of Cuba to the United States would be advantageous to both governments; but that if Spain refused to sell, t was incumbent on the Union to "wrest it from her" rather than see it Africanized like San Domingo.

1. What is the latent heat of water at 32° Fahr., taking zoro as a constant?

2. How many foot pounds of work will be required to change one pound of water at 32° Fahr., liquid state, into steam at 212°?

1. The latent heat of water at 32° Fahr. is 142 units. Water freezes at 32° Fahr. and ice melts at the same point. It takes 142 heat units to melt the ice, which is the latent heat of the water.

2. The heat required to raise one pound of water 1° Fahr. is sufficient to lift 772 pounds to the height of one foot. To raise a pound of water from 32° Fahr. to 212° Fahr. (180°) would require 180 times as much energy.

Be good enough to inform me of the character and genuineness of the "Blue Laws" of Connecticut, and where I can get a detailed account of them.

Many popular conceptions of the "Connecticut Blue Laws" have no basis in the early legislation of the State. They are supposed to have prescribed unwarrantable rules for the dress, the private life, and the religious conduct of the colonists, but very largely they are the fabrications of a clergyman, named Samuel Peters, and are found embodied in Fenwick's "History of Connecticut" (written by Peters), and published in 1781. The State's early enactments are very stringent, but so we must remember was the legal code of England until recent years. The first Constitution and Code of Connecticut inflicted the punishment of death for witchcraft, blasphemy, idolatry, adultery, rape, kidnapping, cursing, and smiting one's parents. It was, moreover, made a penalty punishable by a fine to be an idler, to lie, to indulge in profane swearing, to play at shuffle-board, to take tobacco in public places, to linger in a tavern longer than half an hour, or later than 9 o'clock P.M.

The fictitious blue laws of Peters insist that "no one shall run upon the Sabbath, or walk in a garden or elsewhere, except to and from meetings; no mother shall kiss her child on the Sabbath or on fast days; no one shall read the Book of Common Prayer, keep Christmas or Saints' Days, make mince pies, dance, play cards, or play on any instrument of music, except the drum, trumpet and jew's harp."

See Trumbull's "True Blue Laws of Connecticut and New Haven and the False Laws invented by Samuel Peters," published in Hartford, Conn., in 1876.

Be good enough to give me, through your instructive Inquiries Answered department, some account of Tennyson's poem "The Princess," its origin, and the poet's motive in writing it.

The germ of the poem, Tennyson's "Princess," which was published in 1847, is to be

found in Johnson's "Rasselas," the following quotation pointing to the probability of its inspiration: "The Princess thought that of all sublunary things Knowledge was the best. She desired first to learn all sciences, and then proposed to found a college of learned women, over which she would preside." The poem, Tennyson called "A Medley," and a medley it is, compounded of ancient and modern materials — a show, as Stedman says, of mediæval pomp and movement observed through an atmosphere of latter-day thought and emotion; so varying withal in the scenes and language of its successive parts that one may well conceive it to be told by the group of thoroughbred men and maidens who, one after another, rehearse its cantos to beguile a festive summer's day. The poem is a romantic one and reveals the poet as a delightful, if not a virile, story-teller. The work enshrines some of the finest lyrics in the language.

Two of Tennyson's friends, says Mr. Arthur Waugh — see his "Alfred, Lord Tennyson" — are connected with "The Princess." The scene of the introduction is the garden of Swainston, the seat of the late Sir John Simeon, in the Isle of Wight, and the host, Sir Walter Vivian, is the Sir John Simeon himself. The dedication to Lloyd Lushington is also interesting, since Lushington was an intimate and sympathetic friend of the poet, and it was probably written, or at least re-cast when on a visit to him.

"The Princess," says Prof. Saintsbury, in his recent "History of 19th Century Literature," is undoubtedly Tennyson's greatest effort, if not exactly in comedy, in a vein verging towards the comic — a side on which he was not so well equipped for offense or defense as on the other. But it is a masterpiece. Exquisite as its author's verse always is, it was never more exquisite than here, whether in blank verse or in the (superadded) lyrics, while none of his deliberately arranged plays contain characters half so good as those of the Princess herself, of Lady Blanche and Lady Psyche, of Cyril, of the two kings, and even of one or two others. And that unequalled dream-faculty of his enabled him to carry off whatever was fantastical in the conception with almost unparalleled felicity. It may or may not be agreed that the question of the equality of the sexes is one of the distinguishing questions of this century; and some of those who would give it that position may or may not maintain, if they think it worth while, that it is treated here too lightly, while their opponents may wish that it had been treated more lightly still. But this very difference will point the unbiassed critic to the same conclusion that Tennyson has hit the golden mean; while that, whatever he has hit or missed in subject, the verse of his essay is golden, no one who is competent will doubt. Such lyrics as "The splendour falls" and "Tears, idle tears," such blank verse as that of the closing passage, would raise to the topmost heights of poetry whatever subject it was spent upon.

Our correspondent will find a good deal about the origin of the poem and its dreamy imaginative character in Waugh's Tennyson, above referred to. ($1.50, Macmillan & Co., N. Y., publishers.) See also S. E. Dawson's "A Study of the Princess," Montreal, 1884.

Was there ever an offer made by our Government to any one inventing perpetual motion? If so, how much was the offer?

The Government of the United States has never, we believe, made any such offer, nor, since the laws of mechanics, governing force and motion, have been determined and exhaustively expounded, has any government hoped to discover perpetual motion—that *ignis fatuus* of mechanics — by the offer of a prize or reward to the inventor. From time to time many and curious approaches to perpetual motion have been made by dabblers in mechanics, but, like the fascinating delusion of the last century — squaring the circle — they have been dismal and costly failures.

Will you please answer in your next number what seems to be the most general opinion as to the cause of Sun spots?

Various opinions are still held by the astronomers regarding Sun spots. The best scientific conclusion seems to be that they are cavities in the photosphere or surface of the sun, the result of great convulsions, which produced differences of level, of upheavals, and depressions. These depressions are formed of hollows, more or less regular, surrounded by sharp and salient swelling.

Another view ascribes the spots to cooled portions of matter floating, as it were, upon the hotter photosphere. Between these two different views it seems impossible at present to decide.

Another astronomer holds that the spots or hollows are not voids, but are filled with vapors more or less dense. This idea would explain the various forms which the surrounding rim of the cavity takes on. The more or less fluid character of the rim would permit the taking on of the various forms that are seen through the telescope.

Please give the author of the quotation: "Trust in God and keep your powder dry."

The saying "Put your trust in God; but mind to keep your powder dry," is ascribed to Oliver Cromwell, who made use of it on the occasion of some of his troops crossing a river to attack the enemy. You will find this so stated in Bartlett's "Familiar Quotations," page 588 (Boston, 1891). There (in the citation given) a Colonel Blacker, writing of Cromwell in 1834, quotes the phrase as "Oliver's Advice." See also Hayes' "Ballads of Ireland," Vol. 1, page 191.

Please answer in next issue of SELF CULTURE who wrote the long metre Doxology, "Praise God from whom all blessings flow."

The author of the Doxology referred to was the English Bishop, Thomas Ken (1637–1711), who in 1691 was deprived of his see (Bath and Wells) as a non-juror. His most widely known hymns include the Morning and Evening Hymns —"Awake, my Soul," and "Glory to Thee, my God this night," both of which end with the famous Doxology: "Praise God from whom all blessings flow," etc.

Will you kindly answer the following questions in SELF CULTURE: What compensation did Dr. Bliss receive for his services in attending the late President James A. Garfield? Who paid him? How much did the other physicians receive? Is Dr. Bliss still living? If so, where?

Dr. D. Willard Bliss, who had charge of the late President Garfield's case died at his residence, Washington, D. C., February 21, 1889. He had not received his compensation at the time of his death.

Soon after the decease of President Garfield, Congress passed an Act appropriating the sum of $57,000 to be paid the Medical Staff in attendance during the President's illness. When Dr. Bliss was called upon for his bill he presented one so large that Comptroller Lawrence felt obliged to reduce it in order that the physicians associated with Dr. Bliss should receive their share. Dr. Bliss demanded $25,000 as his share, on the ground that his private practice had been ruined by the reported alleged malpractice of the President's case, and that his health had been seriously impaired by the close attention the exigencies of the case demanded. The settlement of the affair became a matter of controversy in Congress. It was finally referred to a Board of Audit, which made the following allowances:

Dr. Willard Bliss	$6,500
Drs. Agnew & Hamilton	5,000 each
Drs. Reyburn & Boynton	4,000 each
Mrs. Edson (nurse)	3,000

Dr. Bliss refused to accept his apportionment and later a special bill was introduced into Congress for a higher compensation. The bill was pending in 1890, and reports do not show that the matter has been settled to date, unless reported under another name than "Bliss Compensation Bill" which it was at first called.

Kindly inform me what is the shortest time in which one can send a message of ten words by cable from New York to Queenstown.

A cable message can be flashed across the Atlantic instantaneously — ten words, for instance, would not take more than three times as many seconds in reaching the other side after the current is established. The time consumed in Atlantic transmission is consumed in repetitions of a message — that is, in repeating from point to point — rather than in the passage through the insulated wire, provided of course that the current is strong enough. Where there is no need of repeating, time is necessarily consumed in the passing of the current, not directly into the cable, but into a condenser, which cuts off the troublesome earth currents, then into the cable, through which the wave of electricity passes instantaneously. For more precise and authentic information, you had better, however, make inquiry at any of the offices of a cable company in your city.

Please let me know through your instructive magazine 1. how much a cubic foot of sand weighs; 2. how much cement does it take to lay 1,500 brick grouted; and 3. how many cubic feet of clay go to the ton.

1. A cubic foot of sand will weigh 90 pounds.

2. To lay 1,500 bricks, it takes three quarters of a barrel of lime and nine bushels of sand.

3. There are about seventeen cubic feet of clay in a ton.

Please favor me with answers to the following questions:

1. Who is the Poet Laureate of England; also of America?

2. Name a solid that will volatilize without melting.

3. Why is time reckoned a century ahead? For instance, we say that there was no permanent settlement in America until the beginning of the seventeenth

century, while Jamestown, Va., was colonized in 1607.

4. How do you pronounce the term "Huguenot?"

5. Name a good work on Pedagogics.

1. Alfred Austin is the Poet Laureate of England. The office of Laureate is unknown in this country.

2. Camphor and other solids that have a chemical affinity with the atmosphere will volatilize without melting.

3. Time is not really reckoned a century ahead; when we pass the year 1600 for instance, that is sixteen centuries—we speak of events as happening in the seventeenth century, just as we speak of a boy who has passed his sixteenth birthday being in his seventeenth year.

4. The term "Huguenot" is pronounced hū'-ge-not, or if we use the French form, hūg-no.

5. Rein's "Outlines of Pedagogics" (Syracuse, New York), and Bain's "Education as a Science" (Appleton & Co., Publishers, New York), are perhaps the most serviceable works in school pedagogy.

I should esteem it a favor if SELF CULTURE would publish a list of subjects for debate.

Appended are a few suggested topics, in compliance with the request:

1. Is the reformer of greater importance to society than the conservative?

2. Is solitude more favorable to mental and moral improvement than society?

3. Should cremation be substituted for earth burial?

4. Is the English government superior in form and operation to the government of the United States?

5. Is municipal misrule, and the degraded condition of city governments in the United States due to the indifference of the better classes or to foreign immigration?

6. Does the diffusion of intelligence promote general morality?

7. Has the prevalence of fiction in modern literature been, on the whole, a source of good rather than of evil?

8. Has the division of Protestant Christians into the numerous sects and denominations been injurious to the interests of true religion?

9. Is the American character suffering from a lack of religious and moral teaching?

10. Does learning tend, as much as wealth, to create an aristocracy?

11. Does a collegiate education contribute to a man's fitness for business life?

12. Should not a greater effort be made to teach mankind the pleasures to be derived from contentment?

Will you kindly state through SELF CULTURE what is the original home of the orange? Also please name some of the varieties, and tell me the cause of the deep red color in the Malta blood orange.

The orange, from a remote antiquity, has been cultivated in India, and thence it seems to have spread into Western Asia and Europe. It is alleged, on the other hand, that it is a native of the region of the Gulf of Mexico, but the probability rather seems to be that it has been introduced and become naturalized there.

The varieties of the orange are very numerous, embracing the sweet and the bitter—the Portugal or Lisbon orange, the China orange, the Maltese or blood-red orange, the egg, mandarin or clove orange, the Tangerine variety, the St. Michael's, the seedless Majorca, the Seville, etc. The cause of the color, deep red or otherwise, is, if we except the possible effect of the chemical properties in light, a thing "whereof no man knoweth." All that can be said is that it is characteristic of a species, just as it is characteristic of some to be seedless, and of others to be either sweet or bitter.

I should be glad if, in your interesting magazine, you will give me a definition of poetry. Also be good enough to tell me what characteristics mark Robert Browning as a pure poet.

We direct your attention (1) to the article in the "Encyclopædia Britannica" on Poetry, page 256, Vol. XIX. There you will find definitions of poetry, though, obviously, no scientific definition can well be formed, to which all minds will give assent. One defines it as "a criticism of life;" another "the beautiful representation of the beautiful in words," another still "the presentment, in musical form, to the imagination, of noble grounds for the noble emotions." Some test poetry by its form (its singing quality, we mean); others by its imaginative quality and soul or power of stirring the emotions, and so on. But the question you will find fully treated in the E. B. (See above reference). Also see Gummere's "Handbook of Poetics for Students of English Verse," published by Ginn & Co., Boston, New York and Chicago.

2. Your second query regarding the poet Robert Browning, you will find answered, in the main, in the article on the poet in the January number, page 328, of SELF CULTURE. You ask if he is a pure poet and what are his characteristics. Broadly speaking and distinctively, he

belongs to the class of dramatic poets, with a strong psychological element in his composition. In this class he stands among the greatest poets in English literature, though he has little ear for rhythm and music, or for the melodious utterance of verse. His special gift lies in the working out of character, passion and life in the inner operations of the mind, as it has been observed, "showing the very spring and motive of human existence, the secret wheels which regulate the motion of humanity." Much of his work is powerful in treatment as it is novel in form. One other reference under this head. See Prof. Courthope's article on Poetry, in the "Nineteenth Century" magazine, for August, 1896. Courthope is professor of poetry at Oxford, and has thus defined Poetry: as "the art which produces pleasure for the imagination by imitating human actions, thoughts and passions, in metrical language."

Will you oblige me by publishing a formula for making fluxed gold for china painting and ceramics.

A good recipe is: Eleven parts borax; 5½ parts litharge; one part of oxide of silver.

The above is from Janvier's "Practical Ceramics." The statement is also made in connection with the recipe that, though materials for china painting may be prepared, the results will be more satisfactory if the specially prepared paints are used, particularly for the gold color in gilding, as these require special care in preparation. The Lacroix colors are recommended by Janvier. The best preparations are patented and the ingredients cannot be ascertained.

Will you please give me some facts about the Hayes-Tilden Electoral Commission, and the names of its members?

The Hayes-Tilden Commission was appointed, by Act of Congress, January 29, 1877, to investigate certain charges of fraudulent return of Electoral votes from Florida, Louisiana, Oregon and S. Carolina during the presidential election of 1876. The Commission numbered fifteen members, viz.: 3 Republican Senators, 2 Democratic Senators, 3 Democratic Representatives, 2 Republican Representatives, and five associate judges of the Supreme Court. Bradley, the 5th Justice selected, had the casting vote. February 9th, the commission sustained the validity of the Hayes Electoral Ticket in Florida, and later on gave similar decisions regarding the other States. The following were the members of the Commission: Senate Elections: Geo. F. Edmunds, O. P. Morton, F. T. Frelinghuysen, A. G. Thurman, and T. F. Bayard. The House Elections: H. B. Payne, Eppa Hunton, Josiah G. Abbot, J. A. Garfield, and Geo. F. Hoar. The designated Justices of the Supreme Court were Nathan Clifford, S. F. Miller, S. J. Field, William Strong, and (fifth member with casting vote) Jos. R. Bradley. In all eight Republicans and seven Democrats.

Kindly explain the relations that exist between Supply and Demand, and between Cause and Effect.

If subscriber will ask at one of the public libraries to be shown Prof. J. L. Cairnes' "Some Leading Principles of Political Economy" (Harper Bros., New York, 1874) he will find a chapter of much excellence on the subject of *Supply* and *Demand*, showing their exact nature and relations better than in any other text-book with which we are acquainted. The operations of the two agents may be simply illustrated as follows:—Suppose wheat has been selling in the Chicago market at 90 cents a bushel. The brokers or dealers in the grain find that the quantities supplied by the producers at this price are less than the quantities demanded by the consumers; that the stocks on hand are diminishing, and that if this process continues there will be a scarcity of the commodity. The dealers then put up the price to $1.00 a bushel.

At this figure there will likely be fewer who wish to buy and probably more who wish to sell. The quantity supplied then becomes equal to the quantity demanded, until there is, as often happens, a reaction or other fluctuation in the price.

With reference to "cause" and "effect," we may say that the two terms are intimately related, and not, as many mistake, the one being the result of the other. The terms are absolutely correlated so that, in point of *time*, cause cannot be *before* effect, but the two sides of the relation come into simultaneous being.

Nor can cause, as such, exist without effect. As a term of relation, as metaphysicians say, cause is as dependent on effect as effect on cause. The order of priority is therefore purely logical and mental. When a thing or act is caused, its effect is simultaneous, and when an effect is observed there is a cause for it, whether we discover it or not. Briefly, then, cause is that by which something known as the effect is produced, and without which it could not have existed. The cause, as we have hinted, does not precede the effect, but is in conjunction with it. There can be no cause without an effect, nor can there be an effect without a cause. Aristotle divided causes into four classes: the material, formal, efficient, and final. The first is that of which anything is made; as the brass or marble of a statue. The formal cause is the form,

idea, or pattern of a thing; as the artistic idea of the statue. The efficient is the power acting to produce the work; as the mechanical labor employed in producing the statue. The final is that which led to the production, the end or motive in view in producing the statue.

Will you kindly give me some information on the following subject: "The Modern Idea of How to Help the Poor." I have been greatly interested in SELF CULTURE and am especially interested in the "Answers to Inquiries."

The problem of what are the best methods to aid the poor and destitute of a community has been a difficult one from the earliest times. Charity has operated in such diverse ways that many have doubted whether the influence was most for good or for ill. Formerly it was left almost entirely to the religious orders and to benevolent individuals to provide the means of support for the needy. The administration of alms by the church was at first a satisfactory arrangement, but with success came degeneration, and disastrous results followed indiscriminate giving. The change from the ecclesiastical administration of relief work to administration by the State hardly seemed at first to be an improvement.

For a century past the system of poor-relief has been dealt with in England, and that country by its development of the system has furnished the best lessons to the world at large. The influence of economic philosophy upon charitable enterprises as experimented upon by the English poor-laws has caused philanthropy to be regarded as a distinct question in the science of political economy. The argumentation of English economists especially over the issue of factory legislation, in 1834, caused professors of political economy in the United States to agitate the subject. For the most part, however, they had no influence. This country was too young to bother with industrial science. Its resources seemed to be so inexhaustible that no thought was given to preserving them. Least of all was it imagined that we need give serious attention to the matter of poor-relief. It was asserted in our journals that we were guaranteed against poverty and distress by our glorious Constitution and Declaration of Independence. Twenty-five years of this saving policy have, however, changed the aspect of affairs and "principles of economics" "charitable institutions," "philanthrophy, how shall we legislate?" "immigration," "how shall we treat our poor?" and kindred topics, now not only receive a respectful, but quite extended, treatment. In dealing with the question this country has the great advantage of the rich experience of European governments to profit by.

Notwithstanding this fact we have so far failed to find a formula for the relief of the destitute whereby deserving victims of misfortune can be rescued from distress, without, as has been said, by the same means used to enable the children of degradation and natural evil propensities to "be fruitful and multiply" and thus bring about an established pauperism. Modern methods are, however, fast making way, and the methods are along the line of better organization and closer attention to detail. Now earnest efforts are put forth in studying the cause of poverty both in individual cases and in large poverty districts. The causes of degeneracy in the individual and class degeneration are studied by our best professors, and, when the causes are found, strenuous efforts are made to ascertain effective preventatives. Indiscriminate alms-giving is now a thing of the past. When deserving applicants for assistance are found they are properly looked after by regular organizations.

In many of the States, such as Pennsylvania, Ohio, Indiana, Minnesota, and others, the charities of a given locality are mapped out and put under the supervision of agencies, under the direction of the State. The first board for the supervision of charities was established in Massachusetts, and Ohio and New York followed, then Illinois, Pennsylvania and Rhode Island. There are nineteen States in all now having State Boards of Charities. National Conferences are held when secretaries meet and report results in various States. This co-operation in charity work among the general heads in different States as well as the co-operation of those having charge of the sub-districts and the careful culling of the worthy subjects for charity (a directory of which is prepared by the sub-district manager and given to the secretary of the State Board), has given great impetus to the work. Modern methods are in the line of a careful scrutiny of causes which lead to poverty; a careful studying of proper preventatives of causes; co-operation of organizations; the providing of work for those who can work; a careful gleaning of worthy applicants; and a judicious selection of officials to serve in public charitable institutions and on State Boards. In these efforts philanthropists have the hearty co-operation of the leading universities and colleges of the United States. The tendency of modern effort is toward the employment of scientific methods of investigation and a recognition of the necessity of improving institutions and bettering methods, especially to curative and preventive ends.

As charities become complex and social science and philanthropical processes come to be better understood, it is found that the man with definite preparation for charitable work has the advantage of the man not specially prepared. This has led to the introduction of regular courses in "philanthropology" in universities and has developed a new profession and has added a new chair to the faculty. In nearly a dozen Universities of the United States, more or less elaborate courses of instruction are offered to students. The University of Chicago was the first institution and has done the first work in preparing a text book on the new profession.

Have the kindness to give me some information on the subject of Woman's Education in Russia, with the titles of any books in regard to the matter.

Thought concerning the liberal education of women in Russia was first awakened among the upper classes about the year 1840, inspired, it is said, by the writings of the noted Frenchwoman novelist, George Sand, but was for a long time confined to a narrow circle of men of science and authors. The new ideas continued to exist in latent form until the freedom of the serfs, in 1863, when the movement burst forth into life. The reforms of the last reign, the abolition of beaurocratic government, and emancipation, advanced the cause of woman, for the daughters of the office holders and land-owners reduced to poverty by these changes were forced to go forth into the world and earn their own living. Woman's success in the walks of higher education — especially in medicine — has been a victory for those of other countries whose social institutions are similarly under the oppression of mediæval fetters.

In the year 1867, the progressive women of the larger Russian cities formally petitioned the government for admission to the universities, but Minister Tolstoi refused to grant it. The professors of the universities favored the movement, however, and a year later the professors and the women themselves united, more or less heartily, in a common effort to give Russian women facilities for a complete education. The professors of the University of St. Petersburg, profiting by their right to give public lectures, arranged them in such a way as to enable women to pursue university studies and prepare for examinations, so that, ten years before they were officially admitted to the universities, Russian women were striving for, and obtaining progress in, intellectual development.

In the year 1878, the same minister who had refused the admission of women into the universities in 1867, at last agreed to having regular courses arranged for women in the University of St. Petersburg. They were attended numerously by women from far and wide belonging to the best families. The Universities in Moscow, Kiev, Kasan, and other places followed suit. Finland, it is well known, is ahead of other nations in the movement for the higher education of women. The first women's medical college in Russia owes its origin to a donation of 50,000 roubles from a woman. As yet women physicians in Russia may treat only diseases of women and children; notwithstanding this, there are now (1890) two hundred and seventy women physicians in Russia. An attempt was recently made to render the profession of law accessible to women, but the government has prohibited it. It is expected that ere long women will be professors in the universities.

The Pharmical, Medical, and Legal associations have already received women into membership. In literature and modern foreign languages women take an active part. Reviews, magazines, and political journals count many women among their contributors, and in several cases are their directors. It is especially in the domain of fiction that Russian women excel. After the two renowned names of Turgenieff and Tolstoi, the greatest genius contemporary literature can boast of is Kristowsky, the pseudonym of a woman.

In regard to education, the Polish woman is not so well off. In the primary schools alone does she, in her youth, enjoy equal advantages with boys.

See "Higher Education of Women in Europe," by Helene Lange. (Appleton & Co., N.Y.)

"Recollections of Sonya Kovalévsky," translation by Isabel Hapgood. The Century Company, N. Y. (Chap. Biography.)

"The History of Woman Suffrage," by Susan B. Anthony, vol. iii.

Kindly inform me 1. about the Discipline on a War-ship, and to whom I can write for technical information on the subject. 2. Also, please state who were the three greatest Americans.

To learn the details concerning the discipline on board a man-of-war you will have to write to the Secretary of the Navy Department at Washington, or the Commandant U. S. Marine Corps at any of the U. S. Navy Yards.

The discipline is based upon the laws and regulations for the government of the navy, and applies to them at all times except when serving with the army. The regulations are included in the Act of June 30, 1834, and the details fill a small volume. Recruits must be five feet six

inches high or more, between the ages of eighteen and thirty-five, able to read and write, of steady habits, unmarried, sound as to senses and limbs. They enter voluntarily and undergo strict medical examination by a naval surgeon, and are attached to barracks for instruction before being sent to sea. The drill on shore embraces the school of the soldier, company and battalion, skirmishing, target practice, the bayonet exercise, and all military duties and ceremonies. Afloat this continues, and to it is added the great gun or artillery drill, and instruction in swimming, rowing and signal code and the broadsword. Upton's "Tactics" and the "Ordnance Manual" are used. Enlistments are made on board U. S. Stationary ships at the Navy Yards of New York, Boston, Philadelphia, Norfolk, and we think Annapolis. Write to Commandant of Marine Corps at any of these places for rules and regulations governing enlistments, service, etc.

2. Your second inquiry is vague in that you do not indicate the sense in which you mean great — great as a statesman, philosopher, jurist, historian, poet or littérateur. We may mention Washington as a soldier and statesman, Lincoln as a great and wise president who guided his country through the gravest crisis in her history as a nation, Webster as a great jurist, and Emerson as the foremost philosopher. Each of these, however, was great in some particular way, and it is therefore difficult, if not impossible to decide what particular merit entitles any one of the three men to be considered the greatest the country has produced. This country has produced many famous men, but the reasons for their fame are often so diverse that no comparison can be drawn.

Who were the Painters of Barbison, and where is Barbison?

Barbison is a village in France, situate near the Forest of Fontainebleau. The latter is a town in the department of Seine-et-Marne, thirty-seven miles south-southeast of Paris. The palace was from the Middle Ages one of the chief residences of the kings of France, and it was the famous residence of Napoleon I. who abdicated here in 1814. The Forest of Fontainebleau is considered the most beautiful in France. It has become the resort of the modern French school of landscape painters, many of them living at Barbison, Chailly, Marlotte, and other villages near by. Among the original painters of this school, which was founded by Theodore Rousseau, are Corot, Dupré, Daubigny, and Diaz, Troyon, François, Millet, Courbet, Charles Le Roux, Fleury, Veron, Flers, Eugène Lavielle, and Riou. Many others are noted exponents of this style.

Will you kindly furnish through your "Inquiries Answered" department an extract from the Laws of New York under which the Latter Day Saints were organized, and say where in the State the organization took place?

I desire also to know something of certain works on American Indians by two writers, named Adair and Ethan Smith. Please also give me a few sources of information respecting American antiquities.

1. We find nothing in the Statutes of New York relating to any permission granted the Mormons, or of any papers having been filed by them. We do not think it was required of that body (the Latter Day Saints) in organizing to file papers.

The Church of Jesus Christ of Latter Day Saints was organized in the house of Peter Whitmer, in Fayette, Seneca County, New York, April 6, 1830. (Some accounts state that the organization took place in a deserted chapel in Manchester, Ontario Co., N. Y. on the same date.) The Chosen Six comprising the Council were: Joseph Smith (prophet), Oliver Cowdery (scribe), Hiram Smith, Samuel H. Smith, brothers of Joseph, Peter Whitmer, and David Whitmer.

2. James Adair's work, "History of the North American Indians," was published in London in 1775, by Edward and Charles Silly. The author was an agent of the British Government trading with the Indians. He afterwards became a permanent resident among them and spent forty years in the most intimate relations with the tribes of Eastern North America. His book was written while engaged in this work. It is an excellent authority on the manners, language, religious and civil customs, the dwellings and domestic life, of the early Indians. It would be difficult to get a copy of the work now, though it may be seen at some well equipped library.

Ethan Smith's work applies to South American Indians.

We append list of a few works on American antiquities, any of which, we think, are better than the two mentioned. "Prehistoric America," by Marquis Nadaillac, translated by (Mrs.) Nancy R. E. Bell, London, 1845. "American Antiquities," by Alex. W. Bradford, New York, 1845. There is a good deal of information on American Antiquities to be found in Hubert Bancroft's "History of the Pacific Coast."

There are 16 vols. of the "American Antiquarian," all of which treat largely of early America. See also the annual reports of the Archæological Institute of America.

NEW INFORMATION NOTES

Germany seems to be forging ahead in the race for industrial greatness, if not supremacy. She already stands second among the nations in the value of her exports and imports. Official figures put her exports and imports for 1896 at $1,926,729,000; England's were $3,125,820,600. France's $1,366,167,600, and the United States $1,544,770,000. But while she thus stands second as a mercantile nation, she is seventh as a naval power. To the danger arising from that fact she seems to be awakening, and it is predicted that energetic action will be taken so that her fleet may surpass that of France.

The net deposits of the clearing-house banks, observes the New York World, amounted to $563,331,800. The law requires the banks to hold idle as a reserve against this liability no less than $140,833,950 in coin and legal-tender currency. But the banks hold also idle a surplus reserve of $50,148,250. That is to say, there is now in the clearing-house banks of New York alone the sum of almost $200,000,000 of idle money, or $60,000,000 in excess of legal reserve, which cannot be lent to promote any industry or to aid any business venture, because the conditions are such that the prudent industrial and commercial employers of money cannot see their way clear to a profit in the use of this money, even at the very low interest rates demanded — call loans being at 1½ per cent.

The Jerusalem correspondent of the Jewish Chronicle mentions that a steamer has at last been put upon the Jordan which makes the journey from Jericho to Tiberias, *i. e.*, from the Dead Sea, along the Jordan, to the Sea of Galilee in five hours. Recently four Jewish families have settled in Jericho, having rented for five years from the Sultan a large area of fruitful land for cultivation and to be irrigated from the Jordan.

In 1870 the property of the United States was valued by the census authorities at $30,000,000,000 in currency, or $24,000,000,000 in gold. In 1890 that property had so increased in value that it was worth $65,000,000,000 in gold. In twenty years the people of this land added to their tangible possessions property to the value of $41,000,000,000 in gold. But more important are the facts showing the distribution of these vast accumulations of recently-acquired riches. The census of 1850 estimated the number of real estate owners in the United States in that year as 1,500,000. Therefore, at that time, according to the census, 6.47 per cent. of the population and 35.95 per cent. of the families in the country were possessed of real estate, either free or encumbered with debt.

The census of 1890 reports 6,066,417 families living in houses or upon farms owned by themselves. Of this number 4,369,527 owned their farms and homes, free from all mortgage encumbrance. In addition, there were many other owners of real estate, besides these owners of houses and farms used as homes. The owners of homes free from debt made up 6.98 per cent. of our population and 34.93 per cent. of our families in 1890. Taking the individual as the unit, the improvement is equal to 50 per cent. The facts cited show that, whatever may be our present transient indications of prosperity, we have in them from 33 to 50 per cent. more ground for expecting such prosperity than had our fathers in 1850.

A fruitful cause of collisions at sea during fogs is to be found in the difficulty experienced in locating the position of foghorns, sirens and other sonorous signals. One of the devices lately brought out for removing this danger consists in two microphones, one in the bow and the other in the stern of the vessel. The bow microphone is connected with a telephone placed at the right ear, and the stern microphone with another at the left ear of the observer, who otherwise is isolated from the sound of the signal. Taking the speed of the sound and the time it takes to travel the length of the ship, the observer can estimate the direction of the fog signal. When both sounds are simultaneous the signal is at right angles to the vessel.

The Bréant prize of the Paris Academy of Sciences for 1897 is to be awarded for the discovery of a remedy which will cure attacks of Asiatic cholera in the great majority of cases. The prize is of the value of 100,000 francs. The competitive papers must be sent to the Academy before June 1 next.

A western inventor has developed an arrangement whereby the act of opening the furnace door to fire puts into operation a mechanical device for injecting heated air into the furnace, and this injection continues for a predetermined time, being shut off automatically by the attached mechanism at the end of a period, the length of which is determined by experiment, which will allow of the combustion of the volatile constituents of the fuel.

The congress of the Daughters of the Revolution opened in Washington, February 22. A press dispatch states that Mrs. Adlai Stevenson, the president, in the course of her opening remarks, said the growth of the society had been so phenomenal that it seemed hardly possible that the record of the last congress could be maintained. The event above all others which had made the year notable and given the greatest satisfaction was the step taken toward the union of the two societies, the Daughters of the Revolution and the Daughters of the American Revolution.

Superintendent Knoll, at the Hudson Street Hospital, New York City, recently completed an X ray photograph clearly outlining the brachial artery in the right arm of an adult. This is said to be the first time such a feat has been accomplished. The patient who was sixty years old had been suffering from an affection of the arm. The physicians were unable to tell exactly what was the matter. The photograph clearly shows deposits of lime salts in the blood, which has hardened the artery. The treatment of the case was governed accordingly.

What is the most expensive product of the world? It is charcoal thread (filament de charbon), which is employed for incandescent lamps. It is, for the most part, manufactured at Paris and comes from the hands of an artist who desires his name to remain unknown in order to better protect the secret of manufacture. It is by the gramme (15½ grains) that this product

is sold at wholesale. In reducing its price to the basis of pounds, it is easily found that the filaments for lamps of 20 candles are worth $8,000 per pound, and that for lamps of 30 candles they are worth $12,000 per pound. The former have a diameter of twenty-thousandths of 1 millimetre (1 millimetre=0.0394 inch) and the latter four and one-half thousandths of a millimetre. The filaments for lamps of three candles are so light that it would require nearly 1,500,000 of them to weigh a pound. As the length of each of them is 10 centimetres (3.937 inches), their total length would be 187 miles.

An English ship-building yard has installed an electric power plant for driving portable drills, cranes, wood deck planing machines, punching machines, fan blasts, etc., displacing steam power, and effecting by the change a saving in the weekly consumption of coal of from seventy-two to thirty-eight tons.

The chief event of 1900 will be the great exposition to be held that year in Paris. One hundred million francs ($20,000,000) have been subscribed as a guarantee fund. The exposition will offer rare opportunities for American artists, inventors, manufacturers, and workers in every field of human effort to illustrate once more to the world the vastness of our resources, the superiority of many of our industrial implements and processes, and the variety and excellence of our productions. It is hoped that American manufacturers and producers in all lines will be fully represented.

General A. W. Greely has been writing in the Ladies' Home Journal on the unique continental land in the Antarctic Seas. "Its desolate shores," he remarks, "rarely approachable under most favorable conditions, are laved by an ocean the richest on the globe in its marine life —animal and vegetable. Seals and whales in incredible numbers abound in its waters, and countless seabirds cover with nest and eggs the few favored land spots which are free from snow during the brief, comfortless summer. It is a continent where abounds no land animal life, either mammals, birds, insects, spiders or reptiles. No mammal exists within six hundred miles of its borders. It is also devoid of land vegetation (except the lowest forms of cellular tissue, lichens, which have been found in two places only), having neither ferns, flowering plants, shrubs nor trees.

"Here," General Greely adds, "nature displays her forces on a scale elsewhere unknown. Over the millions of square miles of this austral continent ceaselessly continues a titanic struggle between the opposing ancient elements of fire and water. In vain the volcanoes pour forth streams of molten lava and shoot upward pillars of fire. Welcoming the lava as a protecting, nonconducting covering of its lower strata of flowing glaciers, the continental ice-cap resistlessly advances, certain that in time, when the processes of erosion have lowered the elevation of the volcanic craters, its countless, tiny snowflakes will quench the apparently unextinguishable fires that now shake from end to end the continent of Antarctica."

Seven years ago the Congo was practically an unknown river, but to-day its great possibilities as a navigable stream, and the density and intelligence of the population living along its banks are thoroughly known. This continent must bid hard for the emigration of Europe in the next few years, for in a decade's time the tide of emigration will flow to portions of Africa.

Colored silk lace being now so much worn, it is worth while to know how to wash it without fear of injury. First, soak it for an hour in cold soft water, with a teaspoonful of salt to each pint, then wash it in a warm lather of soap and water. "White curd" or "white Windsor" is the best soap for this purpose; and if soft water is not available, borax must be added to the lather. The lace should be squeezed through this several times until clean, and allowed to remain in it for a time. It will then need a final rinsing in clean warm water without soap, salt being added, as at first. Old gold especially, after this treatment, will look almost like new; and in any case, though necessarily somewhat lighter in shade than when bought, it will be uniformly lighter, without that objectionable patchy appearance which one sometimes sees in lace either carelessly washed or imperfectly dyed. If it should be required stiffened a little, a rinse in weak gum water or sugar water will suffice. It must be squeezed as dry as possible, and ironed on the wrong side, between the folds of a clean cloth.

In an article entitled "Made in Japan," a contemporary describes how manufacturing nations have always encroached upon each other's domains. The Dutch, importing English clay, made good profit out of imitations of Chinese porcelain, and after a while the Dutch product became firmly established in the markets of the world as Delft ware. English potters copied the Dutch pattern, sold it a good deal cheaper, and the North of England became the headquarters for Delft china. Lately the Japanese, having acquainted themselves with the patterns best liked in England, encroach upon the domain long monopolized by the English potter. The Japanese product is much finer and stronger, and above all much cheaper than the best English ware, and thus Japan is providing the markets with goods which were originally regarded as a Chinese monopoly.

A New York electrician has devised a scheme, says the Boston Journal, for the indefinite preservation of eggs. For years the only successful method of accomplishing this result has been to submerge the "hen fruit" into lime water long enough to close up the pores in the shell, and kill any germs which might be lurking about. With this treatment it has been possible to preserve eggs in such a state as to permit their use three or four months after the submersion. But at the expiration of this time, while the eggs are in a condition to be used by confectioners and bakers, they have lost the delicacy and freshness which make them appetizing. However, if the electrician's scheme proves to be a success, eggs can be preserved for an indefinite period in as eatable a condition as when first laid. The treatment proposed involves the placing of the eggs in a vacuum chamber. It is a well-known fact that the shell is not absolutely air-tight, and there is always more or less air inside the outer covering, which hastens its decay. Putting them in the vacuum chamber will have the effect of drawing the air from the interior. They are then painted with a composition which renders the shells air-tight.

THE WORLD OF THOUGHT:

ABOUT BOOKS AND AUTHORS

"Guesses at the Riddle of Existence" (Macmillan & Co.: London and New York) is the title of a small volume of thoughtful essays from the pen of Professor Goldwin Smith, dealing critically, and from an orthodox point of view destructively, with current beliefs and opinions in the realm of religious philosophy. Any deliverance or critical judgments from so able and honest a source will, of course, be received with respect by Professor Smith's large audiences in both hemispheres, however pained over the utterances of the little volume readers may be who still cling to the old faith, despite the modern assaults upon it. Commenting upon the volume, a writer in the London Times remarks, that it will excite a large amount of interest, both on account of the personality of the writer and because of the short, trenchant, and often brilliant form into which he has thrown what he has to say.

The "guesses" which so thoughtful a man makes at "the riddle of existence," especially when he himself is nearing old age, cannot be without interest for his countrymen, sad and pessimistic though those guesses be. The present book expresses a complete renunciation of the Christian creed as Mr. Goldwin Smith himself once held it, and as the great majority of his countrymen still believe it, while the place of the writer's old faith is taken by certain sad and tremulous aspirations — we can hardly call them more — towards the great doctrines of God and immortality as necessary to the "heart" of man, though in no sense binding upon his intellect. On the whole we may perhaps say that the volume will be much read and probably much answered. It is the serious utterance of one who has a right to speak his thoughts, and there is in what he says as to the changes in orthodox expression, and perhaps even in Church practice, made necessary by the alteration in many of the older critical beliefs, something which might with profit come home even to the convinced Christian, who holds his own faith to be at least as reasonable as the professor's scepticism.

* * *

By far the most interesting literary announcement of the year, writes a London correspondent of the New York Critic, is that with regard to the present Lord Tennyson's Life of his Father. It seems that, at last, after many conflicting rumors, this most important work has left its author's hands, and is now in the possession of Messrs. Macmillan, who intend to publish it on October 6, the fifth anniversary of the late Laureate's death. In all probability, this will prove to be the book of the year. Lord Tennyson was assisted from time to time by Messrs. Frederick Locker-Lampson, Coventry Patmore, Theodore Watts and other intimate friends of his father; and there will be found in this biography a vast amount of information new even to the most erudite Tennysonian. Indeed, we were reminded only a couple of months ago of how little is known about Tennyson, or even about his biography, by the publication, in Dr. Robertson Nicoll's "Literary Anecdotes of the Nineteenth Century," of an article by Mr. T. J. Wise, in which were enumerated several limited editions of Tennyson's early poems quite unrecorded by his critics and biographers. Such a discovery renders it all the more probable that the authoritative biography will abound in surprises.

* * *

Those who still believe in spirits, haunted houses, thought-transference, mesmerism and other diversions, will find some of their superstitions rudely shaken by a book which is to be published during the present spring from the pen of Mr. Frank Podmore. The author's name is familiar to those who deal in Psychical Research, for Mr. Podmore was for some years one of the most energetic students of spiritualism, and investigated many cases on behalf of the London Psychical Research Society. He is also one of the authors of "Phantasms of the Living." It seems that prolonged investigation has somewhat disturbed Mr. Podmore's faith in the spirit-world, and his forthcoming and important "Studies in Psychical Research" will turn the cold light of common sense upon many of the best reputed stories of phantasms and revelations. Mr. Podmore examines any number of cases with intimate particularity, and finds himself almost invariably bound to confess that the so-called apparition admits of explanation in purely material terms. Diagrams and facsimiles will add to the interest of the work, which will be published in this country by Messrs. G. P. Putnam's Sons, of New York.

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It is an unwelcome fact that but for the interest taken in the Transvaal and its people by writers such as Mr. Bryce, author of "The American Commonwealth," and by the author of "The Story of an African Farm," little attention has been paid to the past history of the Boers by politicians or historians, since no other race requires a more intimate knowledge of its antecedents to be understood. The Boers, who may be said to have originated about the beginning of the seventeenth century, as we pointed out last year in an article in these

pages, have a mixed origin, there being much good, honest Dutch blood, a strong touch of the Huguenot, and a dash of the tar-brush, and besides these three, the early days of Dutch occupation saw many desperadoes and queer characters who "left their country for their country's good." The race as a whole, we are told by a recent writer, has reverted to the Dutch character and type, and, physically speaking, it is without doubt a magnificent one.

In "The Transvaal and the Boers," Mr. W. E. Garrett Fisher has attempted to do justice to this peculiar people. Mr. Fisher's account of the Boers is lucid and well written, and eminently just and moderate. There can be no doubt that the fatal blot on the Boer character is the slave-holding propensity; it was that which determined the "Great Trek" across the Vaal River. "This, combined with a belief in themselves as Israelites and the black men as Canaanites, has led to some terrible deeds, and to a gradual sinking back of the race to the morale of the seventeenth century. Their ideas of warfare prove this. No one seems to realize that for two hundred and fifty years their only literature has been the Bible, and that their character bears a resemblance to that of extreme militant Puritans of the English Rebellion. They are akin to those Hollanders whom the whole power of Spain failed to crush, and their ideas have not progressed an iota since that time; moreover, they are practically nomads, and fighting nomads too."

For the great majority of people the famous Schleswig-Holstein question, which so long perturbed Europe and finally led to the unification of Germany, is dead and buried; but those who study the great European transformation effected by Prince Bismarck will find in the volume just published by Herr Karl Samwer, under the title of "Schleswig-Holsteins Befreiung" (the Liberation of Schleswig-Holstein), much valuable material for their researches. The author, observes a reviewer, has had access to a large mass of hitherto unpublished documents, including the confidential correspondence of Duke Frederick of Schleswig-Holstein — brother of Queen Victoria's son-in-law, Prince Christian, and father of the present German Empress — who was the German candidate for the throne of the Duchies, but was ultimately sacrificed to the annexationist policy of Prince Bismarck.

The work is written in a moderate and judicial spirit, and it contains certain revelations almost as important as those recently made by Prince Bismarck with regard to the relations between Germany and Russia. Its main object is to prove that the late Duke Frederick, though apparently playing for his own hand, was a high-minded, conscientious German patriot, and that the current opinions regarding him were unfairly influenced by calumnies emanating from Bismarckian sources. Those who weigh the evidence impartially will probably admit that the thesis is pretty well substantiated. On the other hand, those who care little for the personal question, and who try rather to discover the secret springs of European diplomacy, will be amply rewarded by a careful perusal of the work.

It is not very difficult to perceive, through the semi-transparent veil of the author's discreet reserve, continues the writer, the main features of that struggle which went on so persistently at Berlin during the Bismarckian *régime* — on the one hand, a policy of honesty and high principle represented by the Crown Prince and Princess, and, on the other, of unscrupulous expediency represented by the Iron Chancellor. The old monarch inclined by personal predilection to the former, but generally yielded in the long run to his official adviser. This interesting volume should be called, according to his own showing, not the "liberation," but the "annexation" of Schleswig-Holstein. He himself describes how Prussia went to war with Denmark to free the Duchies from Danish tyranny, and how when she occupied Holstein she employed the same kind of tyranny in order to prepare the way for the annexation scheme.

By far the most belauded of authors in this present day of doubt, disparagement, and degeneration, observes a writer in Harper's Weekly, is Rudyard Kipling. Different critics estimate him differently, but not even the hardiest of them ventures on any general denial of his powers. Mr. Howells, after reading his latest book of verse, calls him the laureate of the larger England. His poem, "An American," must have given him exceeding satisfaction in the making, and, whatever the reader's sentiments about it, some of the satisfaction is pretty sure to attend the reading. A contemporary thinks that the record in "Captain Courageous" of the progress of Harvey Cheyne's special train from San Diego to Boston is the finest thing Kipling has done in prose. To call it "rattling good" would not be inaccurate, for the rattle never slackens.

It is a curious, and doubtless in some respects a significant, thing that the two greatest contemporary British storytellers, one (Stevenson) with an undying love for Scotland, the other (Kipling) with an unmatched enthusiasm for Imperial England, should both have married American women, lived in America, written American stories, and formed such close relations of business with this country that we cannot help feeling a sense of part ownership in them. The same is true, though in a much less degree, of Du Maurier, in that though he lived and worked in England all his life, as a writer he was discovered and brought out in America. There must be something about this country besides its size, and something about its people, besides their money.

STORIES AND STUDIES FOR YOUNG FOLKS

INSTINCTIVE LOVE OF MIMICRY IN A MOTH

THE Duke of Argyll, in his recent work on "The Unity of Nature," relates an interesting story in regard to moths, and the instinct of insects based upon his own observation some years ago in the South of Europe. It was in the beautiful Riviera, where insect life continues much more active at that season than it can be anywhere in the north of Europe. But even there, although bees are busy during the greater part of winter, and some of our own Sylviadæ find an abundant living throughout the season, the Order of the Lepidoptera are generally dormant. I was surprised, therefore, late in the month of November, to see a large insect of this order come from above the olive trees overhead, with the wild, dashing flight of the larger moths.

Attracted apparently by a sheltered and sunny recess in which scarlet geraniums and bigonias were in full flower, it darted downwards, and after a little hovering, settled suddenly on the bare ground underneath a geranium plant. I then saw that it was a very handsome species, with an elaborate pattern of light and dark chocolate browns. But the margins of the upper or anterior wings, which were deeply waved in outline, had a lustrous yellow color, like a brilliant gleam of light. In this position the moth was a conspicuous object. After resting for a few seconds, apparently enjoying the sun, it seemed to notice some movement which gave it alarm. It then turned slightly round, gave a violent jerk to its wings, and instantly became invisible. If it had subsided into a hole in the ground, it could not have more completely disappeared. As, however, my eyes were fixed upon the spot, I soon observed that all the interstices among the little clods around were full of withered and crumpled leaves of a deep blackish brown. I then further noticed that the spot where the moth had sat was apparently occupied by one of these, and it then flashed upon me in a moment that I had before me one of the great wonders and mysteries of nature.

There are some forms of mimicry which are wholly independent of any action on the part of the animals themselves, and this kind of mimicry is especially common in this class of insects. They are often made of the shape and of the color which are most like those of the surrounding objects in their habitat. They have nothing to do except to sit still, or perhaps to crouch. But there are other forms of mimicry in which the completeness of the deception depends on some coöperation of the animal's own will. This was one of these. The splendid margins of the upper wings, with their peculiar shape and their shining color, had to be concealed; and so, by an effort which evidently required the exertion of special muscles, these margins were somehow folded down, reverted, covered up, and thus hidden out of sight. The remainder of the wings, or the under surfaces which were now made uppermost, were colored and so crumpled up that they imitated exactly the dried and withered leaves around.

And now I tried an experiment to test another feature in the wonderful instincts which are involved in all these operations. That feature is the implicit confidence in its success which is innate in all creatures furnished with any apparatus of concealment. I advanced in the full sunlight close up to the moth — so close that I could see the prominent "beaded eyes," with the watchful look — and the roughened outlines of the thorax, which served to complete the illusion. So perfect was the deception, that I really could not feel absolutely confident that the black spot I was examining was what I believed it to be. Only one little circumstance reassured me. There was a small hole in the outer covering through which a mere point of the inner brilliant margin could be seen shining like a star. Certain now as to the identity of the moth, I advanced still nearer, and finally I found that it was not till the point of a stick was used to touch and shake the earth on which it lay that the creature could believe that it was detected and in danger. Then in an instant by movements so rapid as to escape the power of vision, the dried and crumpled leaf became a

living moth, with energies of flight defying all attempts at capture.

AN AERONAUT ON BALLOON STEERING.

Before I embarked in air-travelling — now about five-and-forty years since — I, writes a famous aëronaut, was accustomed to collect the various newspaper accounts purporting to treat of the "conquest of the air," or, as it was styled at that time, "of the solution of aërial navigation." I did not fail to observe that paragraphs of this kind cropped up now and again, like the appearance of the sea-serpent in later times. I never saw myself, nor could I ever meet with any one who, on oath or by affirmation, would vow positively that he ever saw a man fly, or a balloon go against the wind. We are now called upon to believe — albeit without seeing — that in Paris the problem of direction is completely mastered, and that it is only a question of time and money to convey bodies of soldiers a hundred at a time, and to carry on an out-and-return postal service as easily as by railroad. These declarations will tax the judgment of politicians and generals, as it will be no joke to drop down a war-like race a hundred at a time, or to steer an aërial torpedo bang into the open and vulnerable part of a fortification. Aëronauts, too, will be called upon for their candid opinion. I try to excuse myself by saying that later on I may try to treat the subject seriously and from a practical standpoint; but that at present I will adduce from my own experience one or two instances in which, without any wings, propellors, accumulators, or other aids, I have several times gone forth with a balloon in a given direction, come back again with another current of air, and even landed near the spot where the ascent was made from. It is of paramount importance to explain that this French achievement is no new performance without precedent, and it should not *per se* be accepted as a proof that it can be done again under altered conditions, or that it was solely due to the propelling power attached to the balloon.

Well I remember as a young and ardent voyager how often I have noticed, when the balloon has been anchored, what a strain was thrown upon a three-inch rope, and with what force the restive balloon dashed about before she finally succumbed. Many a shoulder shrug have I given when questioned as to the simplicity and ease of guiding balloons as I looked upon their distended surface in a stiff breeze, and perceived what power is required only to hold your own against it, much more to force the machine in the very teeth of the wind. The oftener I noticed these results the more I became persuaded that mere manual labor, or anything short of a new and powerful motor, would do little or no good for flight or balloon steering. To attempt to apply the wings of a tom-tit to the body of a wild goose would never enable it to fly; every part of a perfect whole must be in proportion, and must not defy or widely depart from the laws of nature. An albatross, to dip and career over the ocean wave, must have large, widely-extended wings in excess, possibly, of the size of the body, and a balloon twice as big as a house stands no chance of wheeling and tacking in mid-air unless by aid of a prodigious screw or gigantic propellors of adequate dimensions. Then comes the great and vital question of animation or power. What machinery that can be taken up in a balloon car of very limited power is equal to the kind of work which a pigeon will perform if you hold it by the feet and allow it to give scope to its wings and muscles? Something of this stir, noise, and demonstration should be forthcoming if the action is to resemble a thing of life.

IN-DOOR GAME FOR YOUNG FOLKS.

Here is a delightful game in which not only many may take part, but which, like really good games, amusement and perhaps instruction may be derived in playing it; and any number may play at the same time. Let us suppose that ten children decide to play this game of "Names." Each player is provided with a long slip of paper and a pencil, and if one of the players has a watch so much the better: if not, a clock must be used. One commences by calling out: "Girls' names commencing with A; two minutes allowed." Each player than writes down all the girls' names that he (or she) can recollect, and at the expiration of the two minutes "time" is called. Then the oldest player reads from his (or her) slip all the names he or she has written down

—say, Amy, Amabel, Alice, Ann, Annie, Amanda, Aileen, etc. All the other players, as the names are read out, cancel any name read out. If for instance, all have written Amy, all cancel Amy, and count one mark. Say six players have Amabel and four have not, each of the six count one mark; those who have not thought and written down Amabel get nothing for Amabel, and so on through the list.

The object of the game is to teach the children all girls' and boys' names. When the marks have been allotted for all the names, the total of marks are read out and noted on each slip. The players then proceed in a similar manner for all boys' names commencing with A, such as Alfred, Abel, Adam, Andrew, Arthur, etc. The game can be continued till all the letters of the alphabet are exhausted, but practically young players rarely care to "do" more than thirty sets, or fifteen letters consecutively. Various names crop up, and the memory is well exercised, and children generally vote it great fun. Anyone introducing pet or fancy names, such as Pussy, Kit, Teddy, etc., forfeits two marks, unless it be arranged that they be allowed.

HOW AN AGED STATESMAN KEEPS HIS YOUTH.

In the latest Healthery Handbook, subject "Athletics," by the Hon. E. Lyttelton, we find the following excellent remarks on the duty of chewing food: The veriest dullard who thinks for a moment on the daily task entrusted to our digestive machinery, how incessantly it recurs, and how serious are the issues involved in its fulfilment; and who has, moreover, learned anything of the delicacy of those organs, and the close relation to happiness, will understand the need of lightening that task as far as we can, and the cruelty of any wanton increase of it. Our system asks for food well chewed and well lubricated, and we give it dry nuggets, at rapidly-recurring meals. . . . I could name a dyspeptic, who travelled in search of a cure all in vain, till a stranger told him to masticate his meat, and he obtained instant relief. But there is a better instance at hand than either of these. Mr. Gladstone is a man about whose physical vigor there can be no question. Men are known in troublous times to cavil at his statesmanship, but no one has anything to say about his digestion.

As early as the year 1848 Mr. Gladstone formulated to himself rules for chewing food. Previously to that he had always paid great attention to this requirement of nature; but at that date he laid down as a rule for his children that thirty-two bites should be given to each mouthful of meat, and a somewhat lesser number to bread, fish, etc. It is also known that to get into a habit of following his example is as easy as can be. A little attention paid to it for two days will ensure the duty being unconsciously performed through life, with the most beneficial results. Truly, history turns upon small causes! The philosopher of future ages may busy himself with pondering what the course of the world would have been had the number been twenty-two instead of thirty-two.

VARIETIES OF SWORDS.

The forms of the sword, writes Colonel Sir Richard Burton, in his "Book of the Sword," may be reduced to three types: the straight-edged, the leaf-shaped, and the scimitar. A French duelling sword is the complete development of the first, a good Persian or Indian sabre of the last. Our Western military swords are a compromise between the two. The leaf-shape, familiar in the classical monuments of Greece, is represented in modern times only by a few eccentric patterns of short swords and sword-bayonets, and possibly, by no means certainly, by the yataghan. The common yataghan form of sword-bayonet, by the way, is much disparaged by Colonel Burton, and we fully agree with him. Probably the yataghan is the most formidable of short hand-weapons; but at the end of a rifle, which it spoils for shooting and makes top-heavy for a pike, it is hopelessly out of place. It is tempting to see, with General Pitt-Rivers, the original type, developed in metal from the hint of a stone spear-head, in the symmetrical leaf-shape. Straighten out the edges and lengthen the point, and we have the broadsword, and are on the way to the rapier. Give the preference to one edge and incline the axis of the blade in its direction, and we have the doubly-curved yataghan shape. Lengthen this blade in

proportion to its width, and transfer the cutting edge to the unbroken convex curvature which forms the back of the yataghan, and we have the Eastern sabre, preserving in the old Turkish scimitar, now rare, and in the common tulwar, with their broadening near the centre of percussion, a trace of the original model. This, we say, is tempting.

The historical evidence is none of the most encouraging to this or to any other simple theory of origin. On the Assyrian monuments we find a tapering, pointed sword with straight edges. Bronze weapons of the same pattern, only longer, have been found in considerable number by Dr. Schliemann at Mycenæ. The like form occurs in Egyptian bronze daggers, and in several iron swords found in Etruscan tombs, to which Colonel Burton justly calls particular attention. Egyptian monuments abound in a particular cutlass or hanger, shaped somewhat like a broad sickle, the name of which is written Khopsh by our author, and connected by him, after Meyrick (with doubtful warrant, we conceive), with the Greek κοπις. The leaf-shaped bronze sword has also been found in Egypt, we are not told with what indication of date, or whether, in particular, under such circumstances as to exclude its being a Greek importation. Of the earlier history of the Eastern sabre there is not forthcoming, that we know of, any positive evidence whatever. Thus we have no proof that the leaf-shaped pattern was, in fact, earlier than the others, but rather a certain amount of presumption to the contrary.

WEBSTER AS A SPEAKER.

I heard the famous "Seventh of March Speech" of Mr. Webster, says Mr. George W. Julian in his "Political Recollections." To me his oratory was a perfect surprise and curiosity. He not only spoke with very unusual deliberation, but with pauses having no relation whatever to the sense. His sentences were broken into fragments, and the hearer was perplexed in the endeavor to gather his meaning. In declaring, for example, that he "would put in no Wilmot proviso for the purpose of a taunt," etc., he made made a long pause at "Wilmot," perhaps a half minute, and finally, having apparently recovered his breath, added the word "proviso"; and then, after another considerable pause went on with his sentence. His speaking seemed painfully laborious. Great drops of perspiration stood upon his forehead and face, notwithstanding the slowness of his utterance, suggesting, as a possible explanation, a very recent and heavy dinner, or a greatly troubled conscience over his final act of apostacy from his early New England faith. The latter was probably the truth, since he is known to have long and seriously pondered the question of his ultimate decision; and, with his naturally great and noble traits of character, he could not have announced it without manifest tokens of uneasiness.

I was greatly interested in the brief dialogue between him and Mr. Calhoun, which followed this speech. Reference was made to their famous passage-at-arms twenty years before; and Mr. Calhoun, while taking exception to some of Mr. Webster's positions, congratulated him on his strong deliverance in the interest of slavery. The great Carolinian was then wrestling with the disease which soon afterwards terminated his life, and was thin, pale, and feeble of step; but his singularly intellectual face, and the peculiar light which flashed from his eye while speaking, made him the most striking, picturesque figure in the Senate. No man can compute the evils wrought by his political theories; but in private life he was thoroughly upright and pure, and no suspicion of political jobbery was ever whispered in connection with his name. In his social relations he was most genial and kindly, while he always welcomed the society of young men who sought the aid of his friendly counsel. Politically, he has been sincerely misunderstood. He was not, as has beeen so generally thought, a disunionist. He was the champion of State sovereignty, but he believed that this was the sure basis and bond of union. He thought the right of State nullification, if recognized, would hold the central power in check, and thus cement the union; while his devotion to African slavery as a defensible form of society, and a solution of the conflict between capital and labor, was doubtless as sincere as it was fanatical.

POPULAR PAPERS ON PHYSICS

STUDIES IN LIGHT:—VIII. COLOR (*Continued.*)

ONE of the ways in which white light may be in a manner sifted, so that it may enter the eye minus some of its component colors, has been disposed of in the preceding instalment. It has been seen that iridescent colors are due to wave interference, being the residuum left when light is reflected under circumstances such that some of the waves of a portion of it are neutralized, wholly or partially, by oppositely undulating waves in the other portion. We have next to consider the case of light sifted by passage through a medium which holds in suspension matter in a finely divided state.

Opalescent Colors

Water which has been rendered slightly turbid by stirring into it a little milk has a bluish color, so long as it is viewed by reflected light; but if viewed by transmitted light,—if a glass of this milky water is held between the eye and a window, and is looked *through* instead of merely *into*,—its color undergoes a remarkable change. It is no longer bluish; it is yellowish. Pure milk is white—the very symbol of whiteness. Yet it appears from this experiment that when diluted with water it may be either blue or yellow. How can this chameleon-like behavior be accounted for?

If we recall to mind that blue and yellow are complementary colors, the union of which produces white, we shall surmise at once that the light which has fallen upon this milky water has in some way been separated, partially at least, into its two component colors, in such wise that while one part has passed through the liquid, the other part has been turned back by reflection. An examination of milk under a microscope will admit us to the secret of the way in which this separation has been effected. Milk is not wholly a liquid. It consists largely of globules of solid matter, all of which are small and some of which are exceedingly small. These globules float in a liquid; but in pure milk they are so densely packed that when light falls upon the milk it can penetrate but a short way into this mass of globules, and is reflected and scattered by them just as it would be reflected from a dry mass of these same solid particles. Furthermore, these milk globules have not the faculty of absorbing one kind of light more readily than another,—a faculty possessed by some kinds of matter, as will be seen later on,—but they reflect all kinds indiscriminately, so that in the mass they appear white.

But when we put a few drops of milk into a glass of water, the case becomes very different. The globules which these drops contain, being scattered through the whole glass of water, now stand far apart. Light easily passes through their midst. Still, in its passage, some of its rays must encounter globules, and will be reflected by them. Here is where the splitting-up takes place. Bear in mind that light is only waves of different magnitudes. In order that a wave shall be reflected upon striking an object, the object must not be below a certain size. If it is too small, the wave will not be reflected, but will make its way around the obstruction. Now, some of these milk globules are large enough to reflect even the largest light waves. They will, therefore, reflect light of all wave lengths and will appear white. But very many of the globules are so minute that they cannot reflect the waves of red and yellow light. The most that they can do is to reflect the smaller waves of blue and violet. These particles will look blue. Were the milk globules all of the smaller size, so that no red, yellow, and green light could be reflected from them, our milky water, seen by reflected light, would have a deep blue color. As it is, the color is simply bluish, there being in it a large admixture of white light, reflected from the larger globules. If instead of milk we had used alcohol in which was dissolved a little rosin, we should have got a deeper blue, the particles of rosin being on the whole smaller than those of milk.

The yellowish color which the milky water has when seen by transmitted light is now easily accounted for. It is a mixture of white light, which has passed

without accident through the interstices between the globules, with the red and yellow light left in those rays which have come through deprived of their blue and violet from their encounter with the smaller particles. By adding a little more milk we may deepen the color. It will pass from yellow to orange, and finally, before the liquid becomes so opaque that no light will pass through it, it will become decidedly red.

Some kinds of glass used for ornamental purposes possess the property of this milky water, appearing bluish-white by reflected light, but tingeing the light which passes through them red or orange-red. The beautiful tints of opal are probably due to the same cause, and this is true also of the bluish, milky color of many other varieties of quartz.

Another very common case of color due to this cause is that of smoke. If smoke, not too dense, is viewed upon a dark background, so that while we look at it we receive into the eye very little light which has passed through it but mostly light reflected from the minute particles of which it consists, it has a blue color. But when smoke is seen upon a light background — a white house or a white cloud, for instance — so that the light which enters the eye is mostly light which has come through it, it becomes yellowish or brownish; or, to state the case a little differently, it tinges with these colors the objects seen through it. There is always more or less haze in the atmosphere — smoke, or dust and moisture; hence all objects in a distant landscape are more or less affected in this way. A distant object which is dark appears bluish, since the light reflected from it is not strong enough to overpower the light reflected from the intervening particles of matter with which the air is charged, while the brighter distant objects are all tinted more or less with yellow and brown.

But by far the grandest and most beautiful exhibition of these opalescent colors is afforded by the sky, both in its prevailing blue and in its gorgeous sunset hues. The atmosphere is laden, if not throughout its whole extent, still to a very great height, with particles of dust and moisture which are so minute that, being kept continually in motion by the currents of the air, they are unable to settle down upon the earth's surface. Like the globules of milk, they are so tiny that many of them can reflect only blue light. Hence the beautiful azure of the sky, which, as all know, is not a deep blue, like that of the ruffled surface of a large body of water, but is blue toned down by an intermixture of white light reflected from the larger dust and moisture particles. The purer the air is, the finer the particles it contains, the deeper is the blue of the sky. When we ascend a high mountain we leave below us a large part of the impurity of the air — those larger particles which reflect white light — and we find in consequence that the sky overhead is of a purer blue; and this is true also of the sky over an arid desert.

After the sun has sunk below the horizon we have the lovely hues of twilight. Overhead the sky is still blue; but near the western horizon it has a yellowish tinge, for the same reason that our milky water was yellowish when we looked through it. The fine particles with which the air is laden have turned back some of the blue rays of the sun's light, leaving us only their yellow portion. If there happens to be much moisture in the air, then the sky near the horizon is tinged with red, for the reason that many of the particles are just large enough to reflect and thus to prevent from reaching us nearly all of the light which falls upon them except the red. Furthermore, the thickness of air which must be traversed by the sun's rays in this horizontal direction is very much greater than when the sun is at considerable altitude above the horizon; the sieve has a greater number of layers of meshes, and this adds to its efficiency. If there are clouds just above the horizon, they are beautifully fringed with golden yellow, for the light which illumines them has been robbed of its blue rays.

It not unfrequently happens that the atmosphere is so heavily charged with moisture that as the sun approaches the horizon it loses its dazzling brilliancy and can be looked at without harm to the eye. It then appears as a great red ball. It assumes the same red color when it is viewed through a piece of smoked glass, that is, through a screen of fine particles of carbon. In these cases nearly the whole of its light is stopped; but these are only extreme cases of a state of things which always exists. Even when

the sun is at its greatest altitude, so that the thickness of atmosphere which its rays must penetrate to reach us is at its least, some portion of its light is stopped by those same dust particles which give us the blue of the sky. The solar light, as it reaches us, is, for this reason, less rich in blue and violet rays than it would be could it reach us without the necessity of passing through the air. This means that this screening of its light gives the sun a slightly yellowish tinge, and that if it could be seen from some point outside of the atmosphere its color would be bluish white.

As it is, though we speak of the sun's light usually as white, it being whiter than that of any of our artificial lights, unless it be the electric arc light, the sun is classed by astronomers among the yellow luminaries. It ranks with such stars as Arcturus and Capella, and is intrinsically less brilliant than such stars as Sirius, Vega and Rigel, which shine with a bluish-white light. What happens to the sun's rays in their passage through the air happens, of course, to those of all of the celestial bodies. The light of all of them would contain, when it reaches us, more blue and violet than it does, were it not for the earth's atmosphere. The most of our artificial lights, from the candle up, are yellow until we come to the magnesium and the electric lights. The electric arc light is in fact, richer in rays of high refrangibility,—blue, violet and ultra-violet rays,—than that of the sun, as it reaches us, and for this reason may be accounted whiter than sunlight.

Color due to Absorption

Iridescent and opalescent colors constitute together but a small part of that infinitely varied ornamentation which nature everywhere sets so lavishly before us. By far the most common source of color is absorption—the faculty which all substances, except the very few which are perfectly transparent, have of retaining within them, and not reflecting, nor transmitting, some part of the light which falls upon them. Thus silver reflects but 92 per cent. of the light incident upon it; steel, 60 per cent.; white paper, 40 per cent.; while paper which has been blackened with lamp-black, reflects but 2 per cent. of the light which illumines it. To account for the unreflected portion, we must understand that when light falls upon any object only a portion of it is reflected from the surface, the other portion penetrating to a greater or less depth below the surface. We are already acquainted with this fact, so far as concerns transparent substances. The statement applies also to those which are opaque. Even the metals are penetrable by light to a slight depth, else, as will appear presently, they would all be of the same color; they would all be as white as white paper.

This fact is likely not merely to be new to the reader, but to be a little difficult to conceive, and it may be well to dwell upon it a moment. Gold is a substance which everyone will call opaque. Yet gold may be beaten so thin as to become transparent, at least to light of a particular color. Through gold-leaf bright objects are distinctly visible, though they are tinged green. Silver may be deposited chemically upon glass in a layer so thin that, though it is thick enough to be polished and to make an excellent mirror, light will pass through it. Objects seen through a glass thus coated appear of a beautiful blue color. Both gold and silver must, then, be penetrable by light to at least the thickness of the leaf, in the one case, and of the chemical deposit, in the other; and it is undoubtedly true, though not so easily proven, that the other metals are similarly open-work for light to a slight depth; and if light can penetrate a metal, we can easily believe that it can make its way into any and every substance.

Now, when light, which, as we know, is nothing else than waves of different lengths, gets below the surface of a substance, among its granules and its molecules, it is affected in various ways, according to circumstances. Substances differ in their texture and their general make-up, and these differences decide the fortunes of the light waves. Some of them, striking upon particles of the substance lying at various depths below the surface, or, in the case of a liquid, upon particles of solid matter held in suspension in it, are turned back by reflection and make their way out of the labyrinth. Others of them are retained captive. These are said to be absorbed. They are not destroyed, however, but are transmuted into heat

waves. Usually it happens that this absorption affects waves of particular lengths more strongly than those of other lengths. The absorption is then said to be *selective*. The result is that the portion of the light which makes its escape returns through the surface deprived of some of its constituent rays. It is this residual light when gives its color to the object.

Let us take, to begin with, a substance which is not "selective" in its absorption, but which treats all light waves which fall upon it with strict impartiality. A piece of chalk may be taken as a representative of substances of this class. Chalk is of about the same whiteness as white paper, and we may assume that not more than 50 per cent. of the light which falls upon it is reflected—in a diffuse way, of course. The other 50 per cent. is absorbed; it is converted into heat. But since the absorption is impartial, affecting equally waves of every length, its sole effect is to render the chalk less bright than it otherwise would be under the same illumination. The light reflected from it, and which renders it visible, comes partly from the surface and partly from various depths below the surface; but it is all white light, the absorption having left its composition unaltered, and accordingly we say the chalk is white.

For the same reason a cloud appears white on the side which is illuminated directly by the sun. A cloud consists of small globules of water, or, in some cases, of small particles of ice. But whether the particles are of water or of ice, they all have reflecting surfaces from which some portion of the incident light is scattered in all directions. Light will penetrate a cloud more deeply, of course, than it will penetrate a piece of chalk; but otherwise the fortune of the light is in both cases the same. A portion of it is absorbed in the cloud; a portion of it makes its way out, and this portion is just as white when it comes out as when it entered, the repeated reflections which some of its rays have undergone not having in the least affected their composition. Snow and froth are other familiar examples of objects which are white, under an illumination of white light, for the reason that the vast number of reflecting surfaces which their particles present to the light simply diffuse it without changing its character. In the case of snow these particles are minute spicules of ice; in the case of froth they are minute air bubbles. In both cases the light by which we see the mass comes from various depths below the surface, but, though some of the incident light has been lost by absorption, that which has escaped has met with no more serious mishap than being reflected, and its composition is unchanged.

It is easy to understand now the rather mystifying fact that froth even upon liquids, like beer and porter, which are strongly colored, is white or only slightly tinged with the color of the liquid. The bubbles of which the froth consists are films of the liquid of a thickness almost infinitesimal; they are nearly all surface. Although some of the light penetrates the mass to a considerable depth, passing through these thin films, yet their aggregate thickness is no more than that of a thin wash of the liquid upon a plate of glass, and the absorption by so thin a layer is scarcely noticeable in the strong white light reflected from the surfaces of the bubbles.

In these cases a portion only of the light is absorbed, and the object appears white. What would happen if all were absorbed? The object would be black. Carbon is a case in point. If a piece of glass is thoroughly well smoked over a lamp and is then held in the sunlight, it will present a greyish black appearance. The very small amount of light which it reflects comes from the surface, and is white light. But this is no more than 2 per cent. of the light which falls upon it. The remaining 98 per cent. has penetrated beneath the surface and has been retained there by absorption, and is doing duty as heat. The smoked glass, has, indeed, the appearance presented by a piece of white paper seen under a very feeble illumination. By mixing this carbon — this lamp-black — with oil, it is possible to eliminate this surface reflection almost entirely, so that the mixture will be jet black. The reason is that the oil and the particles of carbon are more nearly of the same density than are air and carbon, so that scarcely any light is reflected at their dividing surfaces, just as no appreciable amount of light is reflected from a plate of glass immersed in water. Though the surface of the paint, which we have thus made, reflects a considerable amount

of light, it does so somewhat as a mirror without much scattering. We have only to view the painted object in such a way as to avoid this reflection, and it appears deep black. A coat of varnish will make it blacker still, for we then have a surface still more mirror-like, which reflects still less scattered light.

Between black and white lies the whole rich domain of color. We need examine only a few typical cases. We can best begin with the study of colored glass. I have here a piece of glass which, when I look through it, tinges all objects red. I allow a beam of sunlight to shine through it, and the light received upon a sheet of white paper is red. Another piece tinges all objects seen through it yellow, and throws a yellow light upon the screen. Another tinges all objects green; another, blue. Ordinarily, we say that these bits of glass are colored, or stained. The true explanation is that they are opaque in a greater or less degree to certain kinds of light; certain kinds of light in the attempt to pass through them are absorbed more readily than other kinds of light. I say "more readily," because if the plates were thick enough all the light would be absorbed, none of it passing through, for no glass, not even that which in plates of ordinary thickness appears colorless, is perfectly transparent. Why these glasses should have this power of stopping some rays more quickly than other rays, is a question not easily answered, and one with which we are not now concerned. We are concerned only with the fact.

To discover what rays are absorbed by each of these bits of glass, we will test their transparency to different kinds of light with the aid of the solar spectrum. We darken the room and throw a spectrum on a white screen, admitting the sunlight through a slit a couple of inches in length, instead of through a hole as in our preceding experiments, so that we get a spectrum of a considerable breadth. We now cover one-half of the slit with the red glass, and the result is that one-half of the spectrum disappears as far down as the orange. The red and orange still remain, though a trifle less brilliant than in the comparison spectrum beside them, due to light from the uncovered half of the slit. It appears, then, that the color of this glass is due to the fact that it has the faculty of stopping, or absorbing, violet, blue, green and yellow light, while it is transparent to red and orange. Another way of arriving at the same result would have been simply to view the spectrum through the colored glass, when it would have been found that only the red and orange portion was visible.

Experimenting in the same way with the yellow, green and blue glasses, we find that the yellow cuts off the upper portion of the spectrum as far as the green, allowing the colors below this point, the green included, to pass through. The green glass cuts off both ends of the spectrum, leaving no perceptible trace of either the red or the violet. The resulting spectrum is the brightest in the green part, showing that here there has been very little absorption, and it also shows the blue and the yellow with a considerable brilliancy. The blue glass cuts off the lower end of the spectrum, but permits the colors from the green up to pass.

To make a thorough investigation of this matter we should have a spectroscope, by which we could view the spectrum directly through a small telescope, and not thrown upon a screen; but for the purpose merely of forming a general idea of how these colored glasses act, these experiments are sufficient, and any one can easily try them.

In none of the cases just examined are the colors pure, but all are mixed to some extent with the color adjoining them in the spectrum. This is true of all colors due to absorption. Indeed, the mixture of colors is usually much more complex than here represented. To illustrate by one or two cases, diluted blood when examined with the spectroscope shows an absorption of the violet and nearly the whole of the blue, and a partial absorption of the yellow and yellow-green. The color of blood is thus shown to be a mixture of red, orange, a trace of yellow, a considerable blue-green, and a little pure blue.

Another interesting case of a complicated color is that of chlorophyl, the matter to which is due the green color of vegetation. Chlorophyl is found principally in the leaves of plants, and is supposed to be very essentially connected with the chemical operation by which the plant extracts from the carbonic acid in the atmosphere the carbon which forms

the bulk of its structure. The spectroscope shows that, while the color of chlorophyl is made up mainly of green and yellow, with some blue, it has also a large admixture of deep red. To this mixed character of its color is due the fact that foliage is able to reflect yellow and red light, as well as green. The color of foliage under an ordinary illumination of scattered sunlight is yellowish-green. Under a strong illumination of the direct rays of the sun, it assumes a decidedly yellowish hue, yellow being a brighter color than green and being for this reason more noticeable in the strong light.

Under the illumination of the ruddy sunset light, foliage assumes that deep red hue which enhances so greatly the beauty of a sunset scene. It is the red in the composition of its color which, though under ordinary illumination it is unperceived, gives it its power of reflecting those rich, rosy hues. Were there no red in its composition foliage would assume in the light of the setting sun a sombre olive green, deepening where the red illumination was the strongest into black.

It has already been stated that the mixture of pigments, the colors of which are due to absorption, does not produce the same effects as are obtained by a mixture of the colors themselves. The case of blue and yellow is a particularly interesting one. Experiment with the spectrum has already shown us that these are complementary colors. This may also be shown by means of our bits of blue and yellow glass. We affix them to the window sill side by side in such a way that the sunlight streams through them both. Let the light from one of them fall on a mirror and be reflected upon a white surface; with a small hand mirror we can now reflect the light of the other in such a way that the two colors, blue and yellow, will overlie each other.

The result is a greyish white. Now lay the two glasses together and let the sunlight stream through the double plate and fall upon the white screen; we get a totally different color — green. This is the color which we get from a mixture of pigments. The explanation is this: The blue glass cuts off all of the spectrum colors below the green; the yellow glass cuts off all above the green. Green is the only color which is not absorbed — at least not wholly — by neither, and accordingly it is the only color which can pass through the screen formed by placing the two glasses one above the other. It is not a case of mixing colors at all; it is a case of letting one color through and barring out the rest. A blue and a yellow pigment, when mixed together, act in the same way. Together they absorb all of the white light which falls upon them except the green, and this is, therefore, the color which we get from the mixture.

Having accounted for the blue of the sky and the green of vegetation, we cannot conclude this hasty study of color better than with that of water, a third important contributor to the beauty of a landscape. Many persons have an idea that pure water is colorless, and that the deep-blue color of large bodies of water, particularly when their surfaces are ruffled with waves, is simply the reflected color of the sky. This is true only in part. That even distilled water, clear and transparent as it is when we have it in a small quantity in a glass vessel, is not colorless, is seen when by means of any suitable arrangement a thickness of several feet is looked through. It then assumes a greenish-blue color. The water of ponds and lakes is usually discolored, more or less, by vegetable and earthy matter held in suspension in it. It is impossible to look down into water thus dyed to any great depth. To find water in its true color, we must go to the ocean. A body of sea water, where there is a sandy bottom and the depth is not great, has a bluish-green color, when we look directly down into it, thus avoiding, as far as possible, the reflection of the sky. Foam seen at some distance below the surface is greenish-white. Again, when the sky is grey with clouds and the ocean is wave-covered, it throws off altogether its borrowed hue of blue and appears in its proper garb of green.

This color is due, as we now understand, to absorption. When the sun's white light falls upon and penetrates this sea water absorption at once begins, acting the most strongly on the long waves of red light. We may trace the result, as the light reaches different depths, by lowering into the water a white porcelain plate. The light by which we see the plate, being reflected from it, has passed twice through the water between the plate and the surface. At a depth of no more than two or three feet below the

surface it has already assumed a bluish-green hue, showing that some part of the complementary red color of the light which illumines it has been absorbed — transmuted into heat. As the plate descends, the color deepens, until at no very great depth it ceases to be visible.

But though the red light is absorbed the most rapidly, none of the light escapes scot-free, but eventually all of it is absorbed, as completely as light is absorbed by carbon. It has been estimated that even when the sun is pouring down its rays upon the ocean the most strongly at noon-day, none of its rays penetrate to a depth of over two hundred feet. Could a diver descend to that depth he would find himself shrouded in darkness as profound as though he were immersed in a sea of ink. Were it not for matter floating in suspension in this sea water, — minute living organisms and air bubbles due to the breaking of the waves, all of which reflect light, — the ocean, looking down into, would be as black as the blackest dye-stuff, for in that case none of the sun's rays, having once penetrated it, would return to its surface.

G. SENECA JONES.

A MANUAL OF ELECTRO-PHYSIOLOGY

THE rapid progress which is being made in electrical science, observes a recent writer in the Westminster Review, soon renders treatises on electrical subjects antiquated, if not obsolete, and we are glad to see that new works are continually forthcoming to supply the demand for the very latest information. It is only a few years ago that one work could cover the whole field of electricity; but the subject has now become of such vast dimensions that even what was but lately a small section now requires one or two volumes to describe it. One of the first, and perhaps the most interesting, manifestations of the electric current was its action upon animal muscle, and ever since Galvani, or rather Galvani's wife, first noticed the twitching of a frog's leg under electrical stimulus, numerous observers have continued the investigation of this subject. In Germany, especially, physiologists have made extensive use of electricity in research work, and have recorded their observations in numerous periodicals and books. One of the latter, Professor Biedermann's "Electro-Physiology," has now been rendered accessible to English readers by means of an excellent translation, the first volume of which has just reached us.*

The whole subject is treated with that careful attention to detail which characterizes German workers. As the great bulk of electro-physiological work has hitherto been done in connection with muscles, it is natural that the greater part of the book should be devoted to these portions of the animal organism. The first chapter, therefore, consists of a very clear and well-illustrated description of the organization and structure of muscle. This is followed by a consideration of the change of form in muscle during activity, after which comes the more immediate subject of the book, the electrical excitation of muscle and the electromotive action in muscle. The latter subject reminds us of the great loss recently sustained by science through the passing away of M. Emil du Bois-Reymond, the eminent Berlin physiologist.

He it was who, more than fifty years ago, and almost simultaneously with Manteucci, discovered the electromotive activity of isolated, striated muscle. It had, of course, previously been known that motion could be produced in muscle by means of an electric current; but the discovery that muscle was itself a generator of electricity was one of far-reaching significance. It has laid the foundation to other discoveries of the greatest importance and may yet furnish the explanation of many phenomena of organic life, if not of life itself. Before, however, this question can be elucidated to the full extent observers will, we think, have to devote more attention to the chemical reactions which take place. However important the electrical phenomena may be they are but the outcome of chemical changes, and of these changes, we know as yet very little. This book will be found invaluable to all physiologists, especially as it contains numerous illustrations and descriptions of the delicate instruments used in the investigations.

* "Electro-Physiology." By W. Biedermann; translated by Frances A. Welby, London and New York: The Macmillan Co., 1896.

QUESTION DEPARTMENT

OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

THE answers to SELF CULTURE questions for April will be found in Vol. VII., of the new Encyclopædia Britannica on the page indicated by the number which follows the question.

April 1. Who were the Druids and what were the teachings and practices of Druidism? 477

April 2. What did contemporary writers think of De Foe, whose "Robinson Crusoe" is, perhaps, the most widely read juvenile book ever published? 26

April 3. What interesting and instructive facts are presented by Egypt's geography, agriculture and population? 700, 705, 710 and 713

April 4. On what principles are constructed the various kinds of apparatus used by divers, and what is the greatest depth at which such apparatus is effective? 294

April 5. What varied literary resources are exhibited in the lofty and sustained style of Thomas De Quincey, prince of English prose-writers? 101

April 6. How is the ear enabled to transmit certain vibrations to the brain so that they are interpreted as sound? 591

April 7. What singular physical features are presented by the Dead Sea, and what scriptural associations have lent interest to its dreary vicinity? 1

April 8. Amid what surroundings, and with what aids, did Madame Dudevant ("George Sand") prepare herself for a most brilliant literary career? 507

April 9. What points of substantial agreement are found in the Deluge-stories of various nations? 54

April 10. Where are the largest of the eagle family found? 589

April 11. To what tasks were addressed the energies of Demosthenes, whose fame as an orator equals Homer's as a poet? 67

April 12. What countries furnish the finest diamonds, and what is the history of the largest known specimens of this gem? 162

April 13. What success has attended the investigation of earthquake phenomena? 608

April 14. Judged by her geography, present condition, and past history, what chance is there that Denmark will be finally incorporated with Germany? 80, 84 and 562 Supplement

April 15. Which are the principal well-established breeds of dogs? 324

April 16. Which of Egypt's monuments and temples excite the greatest interest? 767, 771 and 779.

April 17. What was Charles Dickens's schooling and preparation for the novels which have carried his name to the uttermost parts of the earth? 173

April 18. What progress has been made in the art of educating the deaf and dumb? 3

April 19. About what time was trial by judicial combat merged in the modern duel, and in what countries has public opinion virtually abolished the practice? 511

April 20. When, where and by whom were the first systematic measurements undertaken to determine the figure of the earth? 597

April 21. What are the chief provisions of the Declaration of Paris, which the United States, Spain and Mexico refused to sign? 21

April 22. Which are the most finished of Dryden's poetical productions? 488

April 23. What are the methods employed to restore persons apparently drowned? 475

April 24. What various theories of education have been advocated from the earliest times down to the present? 670

April 25. How does Albrecht Dürer's best work compare with that of his famous Italian contemporaries, Titian and Raphael? 554

April 26. What is the accepted theory of dream-phenomena? 452 and 455

April 27. What literary excellencies in Miss Edgeworth's books commanded the admiration of Byron and Macaulay, and caused her to rank "second to Sir Walter Scott alone"? 653

April 28. What names and pieces are most prominent in the history of the drama, and in what countries has this form of literature been most assiduously cultivated? 391

April 29. What methods of divination were practiced by the ancients? 293

April 30. What services were rendered to literature by Isaac D'Israeli (father of the more famous Benjamin Disraeli, Earl of Beaconsfield)? 259

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V MAY, 1897 No. 2

STUDIES IN AMERICAN HISTORY:

GROVER CLEVELAND, PRESIDENT

IT is seldom possible to properly gauge the public services of a man until long after his career is ended. It is not only impossible for us to get rid of our prejudices, but no public act can fairly be judged until its full results have been determined. This takes time. Mr. Cleveland may have to wait longer than many others to get his proper perspective in history, and it may be possible that he will get it sooner than is expected. What is of interest now is to get succinctly the facts concerning the late President, who, however considered, is a remarkable man, and if possible attain a true view of his public life as it now appears.

In the first place, I shall utterly discard the question of honesty, which so many of his admirers seem to think he possesses in an unusual degree and which some of his detractors seem to think he totally lacks. An attempt to discuss any President we have ever had on this basis is worse than useless. All have been honest men, men above suspicion of personal integrity. Indeed there have been few men in our public life who have not been honest — according to their lights. This qualification makes all the difference in the world to the public, though it does not alter the personal honesty of the individual. The public has only a humanitarian interest in the personal integrity of its public servants. What it especially desires is that their judgment shall be correct, that their light shall be a true one. We remember that St. Paul said that he verily believed he did God service when he persecuted the saints, yet his remorse was so great that on this account, he added, that he was not worthy to be called an Apostle.

Public Men are Generally Honest

So in our public life nearly every man, I believe every President, has felt honestly that he has done what was best for the public good. Nor is it possible for us to analyze any human being to discover how much he is responsible for his judgment. If we only knew how much heredity, how much environment, how much Providence, and how much our ownselves are responsible for our judgment, we might better be able to judge others. As it is, man is finite in his judgments but infinite in that he is an individual absolutely independent of all others in his moral nature, and is responsible to himself alone for maintaining a clear conscience, and in that even God himself is unable or unwilling to make him act contrary to his own determination. I shall therefore dismiss the question of honesty by saying that I believe Mr. Cleveland to be an honest man with all that the term implies.

Four Remarkable Presidents

Of Presidents with a remarkable personality we have had four. I omit Washington, as he is beyond all comparison, and I do not include Tyler and Johnson, whose personality was strong, but not in the direction to which I refer. Nor do I include Zachary Taylor, in some respects one of our most individual of presidents, because he died before the time came when his personality must necessarily have made itself most strongly felt. But

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Jefferson, Jackson, Lincoln, and Cleveland are all, for very different reasons, men of intense individuality, whose personality is an inseparable part of their incumbency of the high office. Jefferson was a great political dreamer, a theorist, a man with a remedy for every political ill, a democrat by instinct, but often an autocrat in power. As president he was often called upon to do the very things he had condemned in others. He was a plastic moulder of opinion, but had his shortcomings as an executive. He was by nature suspicious and often vindictive. His conduct at times was such that none can now condone, yet no honest student of history can fail to see that, with all his shortcomings, he was a great man, and that his influence on this country has been for lasting good in many directions.

Andrew Jackson

Andrew Jackson had personality enough for an ordinary regiment. He did not seek to lead men like the enigmatical Jefferson. He "drave" them before him, and yet he commanded their admiration. His will was indomitable, but he was a man of the people, and he was shrewd enough always to keep in touch with them and command the sympathies of the masses. No such personal success against obstacles has ever been won by any president. He and Jefferson had about an equal number of defenders and detractors, yet both handed over compact and successful party organizations to their successors whom they named.

Few men in history have been so happy in their death as Abraham Lincoln. Before the last drop of his blood had oozed away the whole nation was plunged in tears, and among his mourners there were many as sincere if not as demonstrative among the Southern people. When first elected Lincoln had a smaller percentage of the popular vote than any candidate has ever received since popular elections have come into vogue. He was distrusted by a large section of his own party who had preferred Seward at Chicago. Slowly the man grew in public estimation as it was seen that he better than any one else understood the mighty problems of the nation and was able to cope with them.

Abraham Lincoln

Lincoln must have made a great president under any circumstances, but it was his lot to be at the head of the nation when nearly every family in the land was filled with anxiety or anguish. What makes Lincoln supremely great is not his intellect, which was great; nor his judgment, which was almost unerring; nor his administrative ability, which was suited to the times; nor his diplomacy by which he managed to make untractable and discordant men work in harmony, and this was phenomenal, — but what was supremely great in him to an extent never equalled in historical records, was that every true emotion of every patriotic heart found its echo in his own, and that every such person came to believe that Lincoln was his truest friend. No man has ever come so near the heart of individuals in any nation: perhaps none ever will. Of all things in this world the most precious is human sympathy, and Lincoln had it for all — even his enemies. If he had lived animosities might have arisen to divide the popular love for him. As it is, we can truthfully say we shall not see his like again.

Grover Cleveland

The individuality of Mr. Cleveland is not like any of these three of his predecessors. He is no theorist as Jefferson was. His will is as strong as Jackson's but he has not the Jacksonian quality that carried popular support with him. In personal sympathy he is in no respect like Lincoln, yet he has a decided individuality all his own.

In purely executive training Mr. Cleveland came to the White House with more varied experience than any of his predecessors, and is unique in the fact that he had no training of any other kind, which may account for many things. He had been sheriff of Erie County, mayor of Buffalo, and Governor of New York State, but had never had the least legislative training, which, on the whole, was unfortunate.

His election to the presidency after one of the most exciting and most disgraceful campaigns in our history was disputed by a large number of Republicans, who have never been convinced that he was not seated through gross frauds in the city of New York, an opinion indorsed by General Butler, who was a third candidate. Whether such a claim was well-founded or not, has no bearing on the quality of Mr. Cleveland's administration, but it did have a very large effect upon the way the President was

viewed by Republicans. It is a painful fact that there are few elections in this country in which more or less fraud is not practiced, but it cannot be said that it is confined to any one party. It is an encouraging reflection, however, that so far as one can judge, these frauds offset each other. If it were not so, we should long ago have brought democracy into contempt. Those Republicans who thought Mr. Blaine was really elected, knew how Democrats felt on the 5th of March, 1877.

As Mayor and Governor

I have said that Mr. Cleveland's civil training was wholly executive. That is only part of the case. It was his fortune to be placed in executive positions where as a Democrat he was in opposition to a large section of his party. His candidacy has always been urged on the score of availability, and generally forced against the real wishes of the majority of his party's leaders. His reputation was made by his vetoes of measures in Buffalo and as governor at Albany. In these he showed a disposition to act independently of all considerations save his own personal views of the merits of such measures. It must be said, in all fairness, that most of his vetoes, possibly all, were justified, and that at least his record as mayor and governor is secure.

Before proceeding to the further consideration of his career, a word must be said of his personality. Mr. Cleveland is an unusually self-contained man. He was never brilliant in act, speech or writing. He is methodical and slow but self-confident. Growing to maturity a bachelor and being what is generally known as a man's man, his views of life were derived from philosophy rather than from experience. Social life may not be the highest, but it tends to an all round development of ideas and is an essential of our gregarious nature. The recluse is apt to be cynical and biassed.

A Careful Official

Mr. Cleveland's success as mayor and governor came through his personal attention to all details and by his injection of personal opinion into every measure that came before him, exactly as if he had been president of a business corporation. This is the proper view for a mayor to take and to a large extent the view also for a governor. When it comes to the presidency of the United States, one can well see that the situation is in many respects different. If Mr. Cleveland had not been a successful mayor and governor he would have been a different kind of a president, though I am not prepared to say a better one. He owed his election to the votes of a large number of Republicans who were dissatisfied with the dominant leaders of the party, who looked with distrust upon Mr. Blaine and who especially favored Mr. Cleveland, because of his expressed views on civil service reform. These looked upon him as a reformer who might bring needed changes into our public service. They had no confidence in Democracy, but only in Mr. Cleveland.

His Silver Views

What may be called the first act of his career, although it took place shortly before his inauguration, was the writing of a letter in which he took strong ground against the extension or continuation of the coinage of standard silver dollars. There was really no reason why he should answer the questions asked him. Few men would have done so. It was characteristic of Mr. Cleveland that he answered very emphatically in a way that he knew would not please his correspondent. There was nothing in this letter, nor indeed in anything Mr. Cleveland has ever written on the financial question, that showed he had made a thorough study of the subject in all its details. Indeed Mr. Cleveland's State papers are not noted for lucidity. His style is heavy and apt to be turgid. There is a tendency to long sentences, big words, and a general lack of simplicity; but no one ever doubts what his points are. What he lacks in style or in clearness of argument he makes up in force of a different kind. He is positive in all things. His papers read like a cross between a lecture on theology and the argument in a patent infringement suit. But, as I said, the matter of his papers is always apparent beyond controversy. In most of them we can trace the spirit which characterized his veto messages as Mayor and Governor.

The Senate in Opposition

Mr. Cleveland was fortunate in having the Senate opposed to him during his first term. In this way he was enabled to shift the responsibility of many failures of his policy.

On the whole he got along much better with the Republican Senate than with the Democratic one in his second term. The Senate during his first term showed a consideration for him that was creditable to its good sense, but was beyond what radical Republicans wished. Most of his nominations for office were confirmed promptly, though there was complaint that he was not so much of a civil service reformer as had been promised. It is true that he was not the kind of civil service reformer that the ultra men of that belief expected and believed that he had pledged himself to be. It is doubtful if this extreme policy will ever be instituted, and it is extremely doubtful if it is desirable. Men are still human, and the desire for office is very human. It must be said in fairness that Mr. Cleveland disgusted his own party far more than he did the Republicans, and for the first three years there was no reasonable ground of complaint. It is extremely creditable that he did so much, and there is no reason to doubt that he felt he was conscientiously carrying out his pledges.

Private Pension Vetoes

There were two important features in his first term of office. The first was his constant vetoes of private pension bills, and the second his tariff reform message of 1887. It has always seemed to me that the President overstrained the mark in the pension vetoes. The great principle on which all Anglo-Saxon governments are based is that the people shall raise the public revenues and spend them. The veto was never intended to apply in cases of this kind. If the people are extravagant, perhaps the surest way to reform is to let them learn the lessons of extravagance. The veto was only intended to interpose in questions where in the nature of things the executive had information the legislature could not have, or in cases where the question of unconstitutionality was undoubted.

We all know how Jackson first raised a storm by his unprecedented use of the veto, and how Tyler ruined himself and wrecked the Whig party by it. The tendency of Mr. Cleveland to pore over every single item as if he were still mayor, was creditable to his good intentions and added a great burden to his duties, but it is doubtful whether the little he saved compensated for the unnecessary wrath he aroused. Moreover he adopted sometimes a facetious and sometimes a scolding style in his vetoes which were unnecessarily irritating to a large portion of the community, and certainly, from a party point of view, worked ill.

The tendency of Mr. Cleveland to forget that he had a party was creditable to his patriotism, but when it is remembered that party government is still a necessity it would seem that he really defeated his own purposes in disrupting his party by wrangling over matters of minor importance.

The Tariff Message of 1887

I shall not attempt to argue the merits of tariff reform. Every person has his own convictions on that score. Granted that the Democratic party was pledged to this reform, there was left the question of method. Mr. Cleveland was never diplomatic. On this great question to which he had previously given little attention, and the details of which he never pretended to have mastered, Mr. Cleveland had convictions. It must be remembered that most of us have convictions on subjects that we cannot always fully explain to others. We may be defeated in argument, but we hold to our opinions still. Mr. Cleveland prepared his views on the tariff in the fall of 1887 and devoted his whole annual message to the subject. His cabinet were almost a unit against the message. It was considered bad policy. They said that it would be better to appeal to the country on the record of his administration and leave tariff reform to the next Congress, when he might hope for a majority in both houses. This was undoubtedly good politics. Mr. Cleveland is a very poor politician. He insisted on sending in his message, believing that it was essential to raise the issue and make it the rallying point in the next campaign.

We all know the result. It was a complete failure, and there is not a little reason to believe that Mr. Cleveland feared that it would be, but decided to do what he thought was right rather than what was expedient. In this we must admire his courage but condemn his judgment. Tariff reform would have come much easier if Mr. Cleveland had been reelected, as he might have been had he not

forced the issue. This, however, does not make us admire him the less for risking defeat for what he believed to be a vital principle.

The Civil Service In the last year of his term Mr. Cleveland relaxed considerably on the civil service question, believing that it was better to use patronage to win rather than that reform should lose what it had gained. He dismissed two United States District Attorneys of opposite faith for "offensive partisanship." Under pressure he restored the Democrat to office but the Republican got no such favor. While it is true that Mr. Cleveland largely extended by administrative order the classes which came under the civil service, the bulk of this favor fell upon the minor employés in Washington, and in many cases after they had been filled by Democrats. His appointees throughout the country to the principal offices, with few exceptions, paid no heed to the civil service at all or easily evaded it.

Whether this was in any way Mr. Cleveland's fault is for others to judge. It seems to me that most of the charges made against him as to the civil service are mere Pharisaism, and would not be worth mentioning at all if he had not personally pledged himself in such unmistakable language on the subject. Nevertheless, it seems to me that he fulfilled his pledges more than is common under the circumstances, and on the whole was far more lenient toward Republicans than might reasonably have been expected. It is not fair to expect a man to keep all his pledges as others interpret them for him. Nor must we ourselves forget to ask who would have done better under the circumstances? When the Democrats found themselves in the majority it seemed to them that it was a fraud — that they should not get everything in sight, and the Republicans suddenly seemed to think that they had a prescriptive right to all the offices for life.

Mr. Cleveland and Mr. Randall Thus closed Mr. Cleveland's first term of office. It can be fairly said that it was an able, upright administration. It brought forth no new policy in important matters, largely because Congress was not in sympathy with the President's views. Mr. Cleveland made a dignified President, and left office with the respect of many who, in politics, were bitterly opposed to him. The one thing for which I blame him more than anything else was his political persecution of Samuel J. Randall, one of the ablest of our statesmen, to whom Mr. Cleveland owed his nomination as much as to any one man. Because Mr. Randall was a protectionist, Mr. Cleveland accomplished his political fall. He took all patronage from him as well as from Mr. Sowden, also from Pennsylvania, going out of his way to veto a bill for a public building in the latter's town. Mr. Cleveland not only knew no party, but he knew no friends when they were opposed to his policy. He took himself and his policy seriously. This is all right in the abstract, but with life such as it is, such conduct seems too bloodless. It might do for the planet Mars or the millennium, but it hardly suits the present age. Mr. Cleveland was dependent upon the people for support, but he never seems to have considered that he was in any way bound to please them. This, I admit, may be a lofty view, and even a patriotic one, but it was not the method of Jefferson, Jackson or Lincoln.

The Second Term as President Well had it been for Mr. Cleveland's peace of mind, perhaps for his fame also, had he refused to run a third time. There is reason to believe that he did not wish to do so. It is certain that he afterwards appeared to regret it. He suffered as every President who has served eight years. Even the immortal Washington became a strong partisan in his second term, and suffered from his political enemies as much as any of his successors.

Jefferson's second term was a disappointment. John Randolph compared it to the kine of Pharaoh's dream. The four lean cows ate up the four fat cows, and were no fatter than before. Madison had a war for his second term, and of all men in America during that period he was the most miserable. Jackson might have gone down to posterity with a much greater reputation as a statesman had he refused a second term, which was eaten up in his fight with "Nick" Biddle and his Bank. Grant's second term found a large portion of his party alienated from him, and the Democrats in control of the House part of the time. Harrison's administration was one of the most successful in

our history, so far as the general prosperity of the people was concerned, but Cleveland was no sooner fairly in his chair for a second term when the storm broke and he had four years of as turbulent a career as any President has ever had in times of peace.

The Two Terms Contrasted

It were idle to say that when he left the White House last March he stood as high with the whole mass of the people as he did in 1889, yet it is on his second term that his reputation as a statesman must stand or fall. Mr. Cleveland accomplished little during his first term, but a great deal during his second. The financial storm which had been gathering broke soon after the inauguration. It is not my purpose to analyze that storm or attempt to *pro-rate* the effect of the various influences that brought it about. The Republican claim that the election of Mr. Cleveland on a free-trade platform, was itself the chief disturbing feature, is worthy of consideration, but every one knows that it was not the only reason. The storm began in Argentina, suddenly shifting to Australia, and tremendous failures in England were the result. Finally came the suspension of silver coinage at the Indian mints, in June, 1893, and the blow to our own silver miners was a terrible one. The panic came on, and for weeks it was feared that we should suffer worse things than had come to pass in 1873. The months of July and August were terrible ones, and that the country survived the storm is a commentary on its real resources. It can be truly said that in those days the bankers and capitalists stood together. They resolved to go over the brink together, if need be, but to help the country to the last. They came perilously near the brink, but the tide was turned in time. Some day a history should be written of how the "gold bugs of Wall Street," by which is meant the allied capital of the country, stood together to keep the country from ruin.

The Sherman Law of 1890

The Sherman law of 1890 had proven a complete failure. Although the United States was buying practically all the silver mined in this country not used in the arts, and was by every means possible attempting to maintain the parity of gold and silver, the two metals drifted farther apart until finally the old ratio of 16 to 1 became 32 to 1. I shall not argue the silver question here. It is enough to state that the financial community became greatly alarmed over the silver question. I think the alarm was greater than need be, but a fancied danger is as terrible to the mind as a real one. We remember the words of the famous Frenchwoman: "I don't believe in ghosts, but I am awfully afraid of them." Fear always drives people to what they consider a course of safety. In this case it drove people to hoard money and withdraw investments, and this paralyzed business. Money is the life-blood of trade, and when it is withdrawn there comes suspended animation. The business people cried aloud for a new financial policy. Mr. Cleveland called Congress in extra session and advised the repeal of the purchasing clause of the Sherman Act. This was accomplished after one of the bitterest parliamentary struggles in our history, and it was done largely by Republican votes. Mr. Cleveland could not otherwise have succeeded, and it can be said that among these critical votes there were many cast by men who were doubtful whether the panacea was correct, but who bowed to the superior judgment of others.

A Manly Course

Mr. Cleveland's course throughout this was in the highest degree commendable. Having fully determined that the repeal was necessary he saw that it was carried out against the wishes of the leaders of his own party. It was charged that at one time he agreed to a compromise and there is no doubt that many believed it; but such a thing is so absolutely inconsistent with his whole career that it cannot be credited without better evidence than now appears. This country owes Mr. Cleveland a great debt for his courageous action on this subject.

The Case of Hawaii

Mr. Cleveland's friends confess that at times he has a very injudicious way of doing the right thing. He apparently has no sentiment, and totally lacks appreciation of what sentiment is to others. Neither has he imagination, and we all know that sentiment and imagination are two of the greatest moving forces in the world. One

of the President's first acts was to dispatch Mr. Blount to Hawaii as a paramount representative of the Government. We know the result. The American flag was hauled down in an ostentatious way, and the President proposed to restore the Queen to her throne under certain conditions which she refused to accept. This hauling down of the flag and the language of his letter to the ex-queen were in very bad taste. There are a great many people of all parties that are entirely opposed to the annexation of the Hawaiian Islands who think that Mr. Cleveland took an undignified way to prevent it. He could have accomplished the same thing without wounding the sensibilities of the people, or stirring them to ridicule by his language to a deposed Queen or angered them by proposing to restore her by force to her throne.

The Looting of the Consulships While this was going on Mr. Cleveland struck a blow at civil service reform by appointing Mr. Josiah Quincy as Assistant Secretary of State, and in the familiar phrase of the day the consulships were "looted" with a celerity never known before. There is no one class of public servants where experience counts for more than in the consular service, and this Mr. Cleveland appreciated, for he later established a sort of civil service for them. Later in his term, after a large number of Republicans had been again turned out, he greatly extended the scope of the civil service law so that the mass of our public officials outside the fourth class postmasters now came under this head. To-day President McKinley has the smallest patronage at his disposal of any President since Buchanan, for there have in the past been many changes at the end of administrations, in spite of the fact that there was no change in party rule.

Civil Service Reform As I said before, the question of the civil service is for every one to decide in his own mind. The "betterment of the service," which Mr. Cleveland alleged for his acts, is one that would probably drive every man in power to about the same policy, perhaps a more radical one. Mr. Cleveland has accomplished a great deal of practical good in the way of civil service reform, but it would be useless to say that he is a theoretical or an ideal reformer according to the tenets of those of the advanced school, or even according to the wording of his party platforms and his own pledges.

Congress on his Hands In a letter to a friend, Mr. Cleveland excused himself from making an engagement on the plea that at the time specified he "would have Congress on his hands." What he meant was plain, but that it was a most unfortunate expression all will concede. Congress is a coördinate part of the Government with the executive and in no sense subservient. Yet Mr. Cleveland has done many things to indicate that he thought the latter view was the true one. His letter, written after the passage of the Wilson bill and read in the House, was little above the language of a common scold. What he said was true enough from his standpoint, but it was hardly the language befitting the occasion. The President was not elected to rule the country by his own will. Congress must share that burden and that honor. That Mr. Cleveland meant to be as overbearing or as discourteous as his language indicated, I do not believe; but all these things show the temperament of the man. He was more serious in his views than was Congress. Few public men have so greatly lacked felicity as well as facility of expression. It is more essential that one should be right than that he should be courteous, but it is a great advantage to be both.

The Struggle over the Tariff Again came the struggle over the tariff. Mr. Cleveland now stated his position not in the lurid rhetoric of 1887, but in a calm, dispassionate message, and Congress set to work. Here was another instance of how campaign promises and party platforms are made only to be broken. The fight in the Chicago Convention over the platform had clearly disclosed that the party was in favor of a tariff for revenue only. Congress, even when largely Democratic, believed no such doctrine. The Wilson bill, as originally drawn, was a revenue measure with a great deal of protection in it. After the House got through with it there was still more protection in it, and when the Senate got through with it the shade of Cobden must have wept. It is well known how

the Senate passed its bill and sent it to the House, expecting a conference, in which the Republicans hoped to tie up the whole bill. The House took the alternative and accepted the Senate bill, which was the worst constructed tariff measure ever passed. It was fixed up by different Senators to suit different sections, and, as a whole, was second in its protective properties only to the McKinley bill. Mr. Cleveland refused to sign the bill, and it became a law after ten days. Here again he was consistent, even if his party was not.

The Bond Issues

Then came the struggle with the finances again. Under our absurd system of finance, the greenbacks issued during the war were not all redeemed after the war. It was ordered that they be reissued as soon as paid into the treasury, though for what reason, except to satisfy untutored minds, has never been discovered. To redeem $400,000,000 of paper the Government keeps on hand $100,000,000 in gold. In ordinary times this is ample, for no one wants gold unless there is a prospect of it rising to a premium. This is what happened in the panic of 1893 and the months following. When the gold supply ran short Congress was asked to provide a remedy which was not done. The only other remedy was to sell bonds for gold to replenish the reserve. The trouble with this plan was that the bidder for bonds could draw on the treasury for the gold in it to pay back to the Government. To provide against this at a time when it was feared that every day might bring the country to a suspension of specie payments, Mr. Cleveland made a contract with J. P. Morgan and others to furnish some $62,000,000 in gold for five per cent. bonds, the only ones he could issue, the President's former law partner drawing up the contract. This contract the President sent to Congress and asked that in lieu of it he be authorized to issue three per cent. gold bonds. A three per cent. gold bond would have floated at par, but the contract with the Morgan syndicate was on a four and a-half per cent. basis.

The Syndicate Bond Contract

It was a hard bargain, and it has been rightly said that the syndicate had little patriotism. Their excuse was that the bonds they bought were payable in "coin" and that it was possible that silver would be offered when they came due. The proper answer to this is that if such a contingency was actually feared the bonds would not have been bought at all, or else at a discount instead of a premium. But time was urgent and Mr. Cleveland was in the position of the president of a corporation who fears every day that he may have to make an assignment. If he could have made a better bargain he would undoubtedly have done so, but the people in Wall Street had by this time got tired of the language used by the silver Senators. Congress refused to authorize the gold bonds, and a purchase was made which relieved the strain for a time. Then an attempt was made to "coin the vacuum" in the treasury: in other words, to issue notes on the purchased silver bullion at its coinage value. This the President promptly vetoed, and properly so, as it was not a desirable measure from any standpoint except that of getting something for nothing.

Events proved that the country was not quite so badly off as Mr. Cleveland thought, and when the reserve ran down again there was no trouble in selling bonds to the public at a high premium. It took $262,000,000 in bonds to keep the reserve up and pay the deficit of the Cleveland administration, for the Wilson-Gorman bill failed as a revenue measure owing partly to the hard times, but it is doubtful if it ever would have done what was expected of it.

Theory and Practice as to the Tariff

So far as the tariff is concerned, it can be shown by convincing arguments on paper that free trade is the most desirable for any nation that has in any way progressed towards self-support. But arguments on paper seem to fail very often in practice, and the most devout free trader is apt to be a protectionist when it comes to an industry that affects himself or his own community. Mr. Cleveland acted up to his lights, but it is not likely that we shall ever have a settled policy on this subject until many years have passed. The verdict of the last campaign is as decisive in favor of protection as that of 1892 was supposed to be the other way. As a matter of fact, if other things are in good shape this country can prosper under any kind of a tariff that will give

it sufficient revenue, though it may do better under one kind than under another.

The Venezuela Imbroglio The scene now shifts to foreign affairs, with which Mr. Cleveland's last year was largely taken up. The State papers are largely those of Secretary Olney, but of course they met with the approval of the President. The President's message on the Venezuela question came like a thunder clap. It was a threat of war against Great Britain, if she did not agree to arbitrate the disputed territory. The language used on this occasion was unprecedented. He said that the United States was practically sovereign on this continent, and that "its fiat is law." This is a statement that cannot be proven, and one cannot understand in what Pickwickian sense it was intended. Our fiat is certainly not law in Canada or Mexico or Brazil — not even in a Pickwickian sense. The language of this correspondence with Great Britain was undignified and full of bluster. Yet, most strange to relate, not only did Great Britain concede our entire position but agreed to a treaty by which it was to arbitrate every other difficulty with this country. This is one of the most surprising things in the whole course of our own or of British diplomacy. Mr. Cleveland won a signal victory, one that he deserved to win, for the action of Great Britain was such as to cause us uneasiness, but the language of our diplomacy was not that to which this country or Great Britain was accustomed, and it was feared that a war would result.

Troubles with Spain Then came the troubles with Cuba, and one could wish that Mr. Cleveland had used a little stronger language toward Spain, for the manner in which American citizens were treated. Secretary Olney seems to have taken entire charge of the matter, and he showed a temper that was far from diplomatic — even going so far as to announce his refusal to forward a resolution recognizing the independence of Cuba in case it should pass Congress. There was a long dispute as to whether the recognition of belligerency or of independence is a purely executive function or not. Mr. Cleveland held that it was, and stuck to it with his usual pertinacity. The best authorities now seem to think that both Congress and the executive must act in such a matter, where there is a difference of opinion. It was natural that Mr. Cleveland in the dying weeks of his administration should desire to avoid any trouble and thus not hand over a great international complication to his successor, who might not agree with his policy. Secretary Olney showed bad temper in his last few months of office. The man who was going to fight England because she would not arbitrate a question of territory in South America looked with unconcern upon the imprisonment of our own people in Cuban dungeons. The alleged Ruiz murder and other instances show that he was totally lacking in the true American spirit. It is true that some of these men might have been guilty of crimes, but they were entitled to decent treatment. The idea of confining a man in a dungeon for days because he had, as was alleged, Cuban postage stamps in his possession, is enough to stir every true American heart; but Mr. Olney seeemed to care for none of these things.

The President without a Party The campaign of 1896 found Mr. Cleveland without a party. He was rejected by the regular Democracy and though endorsed by the Gold Democrats did not openly affiliate with them. His policy made it impossible for the regular Democracy to succeed and he did what few men would have done under the circumstances. It required great boldness so to defy his party, but he stood up manfully to the task. Indeed it never seems to have concerned him in the least and he left office with hosts of personal friends in all parties but with no organic following worth the name. Republicans should be especially grateful to him for his service to their party during this campaign.

The Immigration Veto The final important act of Mr. Cleveland was to veto the Immigration bill. Of all his State papers this veto message is the weakest. It may be that the bill was undesirable, but the reasons he gave for it convinced no one, and were in fact good reasons for its passage. Last of all that ends this strange eventful history was his refusal to sign three great appropriation bills, an act I believe unprecedented in our history, and which, as I have already said, I do not think the fathers

contemplated. In any event, such a course is of doubtful wisdom.

It is evident from this brief review of Mr. Cleveland's two terms, that he has aroused intense antagonisms, that he is indeed a man without a party, yet with many friends. It is probable that most candid men find a great deal in him to admire and much to condemn. He was the most personal of all our presidents. He has considered that he was not only the executive but the attorney, in fact, for every man, woman and child in the nation. He has magnified his office. He has done what seemed right in his own eyes, without regard to the opinions of others. No man has seemed to care less for public opinion. He has practically defied it many times, but it has not injured him.

A Question of Temperament It is reported that Samuel J. Tilden said that he was the most selfish politician in the country. That is a hard saying, and cannot be substantiated from known facts, if the word selfish is given its ordinary meaning. Mr. Cleveland has in all his career seemed exceedingly indifferent to public opinion or public favor. He is apparently not a sensitive man. He has had little contact with life as it comes to the ordinary citizen. He thinks for himself and acts, and woe be to the man that gets in his way, if he is opposing what he believes is a principle. That is not selfishness. It seems to me that Mr. Cleveland is likely to grow in estimation as the years go by. Just now he has few unqualified admirers, but when the passions of to-day are passed, and we can look calmly at his career, I imagine there will be found much more to admire than appears on the surface.

Not a single measure of Mr. Cleveland's has been a party success. His party is against free silver and his free trade ideas have been overthrown. Mr. Cleveland has been a bulwark of strength to the nation financially, if our views of the financial situation are correct, and I imagine that if international bimetallism ever comes, or "something is done for silver," that the free silver people will find that Mr. Cleveland's policy was in the end the best for them. After all, it is Mr. Cleveland's manner that has aroused most antagonisms. When that is forgotten, his acts will stand out more clearly and can be more calmly judged.

I have written this at another's suggestion, and have done so with some diffidence, because of the impossibility of being as absolutely impartial as I would like. I can only say I have tried to be so. I have used the personal pronoun because I have ventured only personal opinions, and made no attempt to pronounce an historical judgment. It seems to me that Mr. Cleveland is like a great many other men whom all of us know (our own selves, for instance),—not so bad as his enemies paint him, by any means, nor so perfect as his friends think, but a more than average man, who meant to do right all the time, but made some mistakes. The next twenty years may do a great deal for the fame of the only Democratic President in thirty-six years.

JOSEPH M. ROGERS.

HIGHER EDUCATION IN THE UNITED STATES

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THE subject of Higher Education in the United States may be treated under three heads,—I. The period of college-planting, 1636–1776; II. The period of expansion, 1776–1865; III. The period of university development, 1865–1896. In part this division is artificial. The multiplication of colleges has continued until the present time, while the beginnings of university development must be sought before 1865. Still, as college expansion is not the characteristic feature of the third period, or university development of the second one, the division answers to the general facts of the case, and will serve a useful purpose.

The Period of College-Planting, 1636-1776 The history of higher education in the United States begins with the following order or enactment, made by the general court of Massachusetts, Sept. 8, 1636:

"The court agreed to give £400 towards a school or a college, whereof £200 should be paid next year, and £200 when the work is finished, and the next court to appoint where, and what building."

At subsequent meetings of the court it was ordered that the school should be located at Newtown, the name of which was afterward changed to Cambridge, and that it should be called Harvard College. The name of the town was changed, as President Quincy has explained, as "a grateful tribute to the transatlantic literary parent of many of the first emigrants, and indicative of the high destiny to which they intended the institution should aspire." It was called Harvard because the Rev. John Harvard, a dissenting clergyman of England and resident of Charlestown, who died in 1638, bequeathed one-half of his whole property, and his entire library, to the college. The act creating a board of overseers was passed in 1642, but teaching began in 1638. This was an humble beginning, but it was made within ten years of the "great emigration" to the shores of Massachusetts Bay. An attempt was made to concentrate upon the college the support of all the New England colonies, thus making it not merely a Massachusetts, but a New England, institution; but the plan did not, in the end, succeed.

Eight other colleges were founded, in seven different colonies, before the Revolutionary War: William and Mary, Virginia, 1693; Yale, Connecticut, 1701; Nassau Hall, now Princeton, New Jersey, 1746; Kings, now Columbia, New York, 1754; Philadelphia, now the University of Pennsylvania, 1755; Rhode Island, now Brown University, 1764; Queens, now Rutgers, New Jersey, 1770; Dartmouth, New Hampshire, 1769. Some of these colleges grew out of older schools, and some had their rise at places other than those with which they have now long been identified. "Some future poet, or mythologist," President Gilman observes, "may personify these as the nine colonial muses."

These colleges all had a common character. This was not so much because the eight later ones copied Harvard, as because they all copied a common original. The founders were Englishmen by birth or descent, and had little knowledge of institutions of higher learning except those of England. The founders of Harvard, many of whom were bred at Oxford and Cambridge, called their institution a college and a university indifferently, which shows that their minds had been deeply impressed by both sides of those great seats of learning. Wisely, however, they modelled it after the English college, and not after the English university. Moreover, all other American colleges and universities for two hundred years conformed in general to the same model.

Early Colleges Practically Church Schools

With a single exception, these colleges were virtually church schools. The Congregationalists controlled Harvard, Yale, and Dartmouth; the Episcopalians, William and Mary, and Kings; the Presbyterians, Princeton; the Dutch Reformed, Queens; the Baptists, Rhode Island. Philadelphia alone was nonsectarian, but even that partook largely of the ecclesiastical character of the times. *Christo et Ecclesiæ* might have been the motto of any one of them as well as of Harvard, with the possible exception of Philadelphia. Church influence is seen in the make-up of the faculties, in the destination of the students, in the studies and discipline, and in the spirit of the schools. The presidents, and probably a majority of the professors and tutors, were clergymen; while one-half of the 531 graduates sent out by Harvard previous to the year 1707 became clergymen. In her first period, so much Latin as was sufficient to understand Cicero, or any like classical author, and to make and speak true Latin in prose and verse, and so much Greek as was included in declining perfectly the paradigms of the Greek nouns and verbs, were required for admission to Harvard. The first year the studies were logic, physics, etymology, syntax, and practice on the principles of grammar; the second year, ethics, politics, prosody, and dialect practice of poesy and Chaldee; the third year, arithmetic, geometry, astronomy, exercises in style, epitome, composition, both in prose and verse, Hebrew and Syriac.

Besides these studies, all the students were practiced throughout the course in the Bible and catechetical divinity. History was taught in the winter and botany in the summer; rhetoric was taught by

lectures every year, and declamations were required of the students once a month. Still more, the students were practiced twice a day in reading the Scriptures and giving an account of their proficiency and experience in practical and spiritual truths, accompanied by theoretical observations on the language or logic of the sacred writers. They were careful to attend to God's ordinances and be examined on their profiting, commonplacing sermons and reporting them publicly in the hall.

"Such," says President Quincy, "were the principles of education established in the college under the authority of Dunster. Nor does it appear that they were materially changed during the whole of the seventeenth century." All things were done according to the academical custom in England. The government was rectorial, the instruction tutorial. The scholars were not permitted to use the vernacular language within the college limits on any pretext. The freshmen were servitors, or fags, to the whole college, out of study hours, to go on errands. Still, we must not lay too much stress on the ecclesiastical side of the early American colleges. In those days, Church and State were but different sides of the same society, and the conception of secular or neutral education had not yet dawned upon men's minds; certainly not in the American Colonies or in England. This explains why governments, as that of Massachusetts, contributed freely from the public treasury to establish and support what we can hardly regard otherwise than as denominational institutions. Furthermore, these colleges looked to furnishing able servants for the State, as well as learned and godly ministers for the church, and how well they performed both offices is shown by the ability of the public men whom they trained, particularly at the time of the Revolution, and by the strength of the American pulpit.

"The extraordinary training in the ancient languages," says Professor Tyler, "led to forms of proficiency that have no parallel now in American colleges." He relates, further, that in 1649 some of the students at Harvard could with ease dextrously translate Hebrew and Chaldee into Greek. There was at the same institution, in 1678, an Indian student who wrote Latin and Greek poetry, and those arts continued a common accomplishment down to the Revolution, while the facile use of Latin for both conversation and oratory by Harvard and Yale scholars excited no remark. In the early history of several colleges much is heard of Christianizing the Indians. Dartmouth grew directly out of an attempt to accomplish that end; studies were prescribed for Indian students, that, in later opinion, reflected severely upon the good sense of those who prescribed them; but the results of the efforts, wherever made, were miserably disappointing. Still, the name of one Indian stands among the Harvard alumni.

The Era of Modern Studies as Yet Afar Off

So much space has been given to Harvard College because, in dealing with that institution, we are dealing with the highest type of American education. At some other colleges, the theological features and influence may have been less prominent, and even at Cambridge they yielded somewhat, as time wore on. It must be remembered that, in England, contemporary liberal education was quite as theological as in America. Besides natural philosophy, no great stress was attached to modern studies. The demand for surveyors, particularly in Virginia, tended to emphasize mathematics. French was taught for a few months at Cambridge in 1735, and again for a brief period at the close of the Revolution, when the alliance with France tended to bring French arts and science, as well as Frenchmen, into the country. French is also found at William and Mary at the same time. Franklin made a gallant struggle for an English school in the institution at Philadelphia, but he was in advance of his time, and so failed, much to his mortification. German studies thrived at Philadelphia for a while, and then declined. No permanent provision for teaching modern languages and literatures was made at Cambridge until George Ticknor entered on the duties of the Smith Chair in 1819, and no instruction was given there in German until the day of Charles Follen, the German exile, who taught his first class in 1825.

The foregoing is an outline view of higher education in the Colonies previous to the Revolution. What was done should not be estimated too lightly. Mr. Jefferson demanded of his correspondent,

Mr. Bannister, in 1785, on his return from France, "Why send an American youth to Europe for education?" And then, after enumerating the objects of a useful American education, declared, "It is true that the habit of speaking the modern languages cannot be so well acquired in America; but every other article can be as well acquired at William and Mary College as at any place in Europe." Mr. Jefferson, it is to be observed, had made a particular study of contemporary education, not only on the Continent, but in England and Scotland. The remark just quoted was no doubt intended to apply mainly or only to undergraduate study. Mr. Jefferson admitted the inferiority of American education in medicine, but insisted that law could be studied as well in Virginia as in England. A recent historian of the Thirteen Colonies, H. C: Lodge, says, Harvard College, "at the period of the Revolution, probably afforded, in theology, philosophy and the classics, as good an education as could be obtained in Europe, for the professors were men of character and learning, and some of them eminent.

Previous to the Revolution it was very common for wealthy families in the Colonies to send their children, both sons and daughters, to Europe to be educated. This was especially the case in Maryland, Virginia, and South Carolina. It is also to observed, as marking the connection between the mother-country and the Colonies in that period, that considerable sums, and sometimes large sums, of money were obtained in England for American colleges, just as has since been done in the old States of the East for the new ones of the West.

The Period of Expansion, 1776–1865

The Revolution stimulated the planting of colleges much more than it stimulated the extension of public schools. From the close of the war to the close of the century, new colleges were founded more rapidly than one a year; namely, St. Johns, Washington, and Frederick in Maryland; Dickinson, in Pennsylvania; Union, in New York; Hampden-Sydney and Lexington, now Washington and Lee, in Virginia; Georgetown, in the District of Columbia; the University of North Carolina and the University of Vermont; Bowdoin College, in Maine; Williams, in Massachusetts, and Middlebury, in Vermont. Nor was this all; higher education was at once carried beyond the Appalachian ranges and planted in the great valley of the West. When Tennessee was still a part of North Carolina, the legislature of that State passed an act incorporating the president and trustees of Davidson Academy, which, in time, became the University of Nashville. At one time this institution exerted a widespread influence in the Southwest; then it declined, and is now reviving again. Transylvania University, Lexington, Kentucky, chartered in 1798, was the first institution of higher learning in the West to open its doors to students. After a period of prosperity it, too, declined, and years ago ceased to exist.

It will be seen that state universities have already appeared among the colleges. It is a probable conjecture that they were prompted, in part at least, by the Congressional land grants for universities in Ohio, which, it was understood, would be repeated in the case of other public land States. In all, there were about thirty college foundations in the country in 1801, as compared with nine in 1776. Moreover, from that day to this the number has continued steadily to increase. The statistics, unfortunately, are in a confused state, partly owing to inattention to collecting them, partly to carelessness, and partly to the difficulties of the subject itself. The Census-Office first collected educational statistics in 1840: the number of institutions in all the States in that year were 173, and the number of students 16,233.

Statistics of Colleges

In 1850 the Census-Office reported 234 colleges and universities; in 1860 it reported 467; and in 1870, as many as 579. Since 1870 no college statistics are found in the census reports. More discriminating inquiry has been made by the Commissioner of Education, who reported 337 colleges in 1869–70, and 451 in 1892–93. These numbers, however, do not include many so-called colleges contained in other tables. It is next to an impossibility to ascertain how many degree-conferring institutions there are in the country, and quite impossible to ascertain how many institutions there are bearing the name of "college" or "university." It is clear that a college-planting movement set in at the close of

the Revolution, which has been sustained until the present time, and that this movement was marked by a distinct lowering of the old college ideal. For many years the former distinction between a college and a university was practically forgotten, and to a large extent it is overlooked to-day.

The principal causes that have led to the constant multiplication of American colleges appear to be these: 1. The territorial growth of the country; 2. The increase and wider dispersion of population; 3. The Congressional land grants to the states for universities and colleges of agriculture and mechanic arts; 4. Religious zeal and sectarian rivalry; 5. Local interests, sometimes embracing commercial interest; 6. The ambition of individuals to give their names as founders to institutions of learning; 7. Desire to commemorate the names of relatives; 8. The lowering of the college ideal. Attention should also be drawn to the impulse which the formation of the republic gave to the national life, and the augmentation of this impulse by the growth and prosperity of the country.

In general, the old type of study, instruction and discipline remained unchanged throughout this period. Greek, Latin, and mathematics continued to be the principal studies. Studies were organized in prescribed courses, and the degree of A. B. was given to all graduates. A majority of the old institutions continued to hold their former leadership, but two or three fell behind new institutions. The differences in what passed for higher education were quite as marked as the differences of culture in the several regions or districts in which they were found. In this respect the statistics of 1840, showing the relative numbers of college students in different States, are very significant. One of the most important facts was the founding of the State universities, most of which grew out of the Congressional land grants. The establishment of these institutions involved ultimately, if not at once, the assumption, by the States, of a definite position in the field of higher education, which carried with it State supervision and support, and so a distinct secular influence. Upon the whole, church influence considerably declined; still, the higher institutions, including the State universities, remained mainly in the hands of clergymen. When Josiah Quincy, a layman, was made president of Harvard in 1829, it was thought a clear invasion of clerical privilege.

The Multiplication of Colleges

How far the multiplication of colleges has been an evil is a question of judgment. It is common to hear scholars, especially those at the great seats of learning, lament this multiplication, with the consequent dispersion of funds, teaching-power and students. "How much better," they say, "it would have been if the funds, professors and students had been brought together at a few great institutions, as in Germany, France, and England." These forget that, to a great extent, such a concentration never could have been effected, and that the policy of dispersion has tended very considerably to augment all the factors. No doubt there has been much waste; no doubt, owing to the increase of wealth, the elevation of the standard of living, and especially the greatly improved means of transportation, the time has come for more concentration, such, in fact, as we are now seeing; but there is a great deal of truth contained in the notable words of the author of "The American Commonwealth," Mr. James Bryce:

> The European observer conceives that his American friends may not duly realize the services which these small colleges perform in the rural districts of the country. They get hold of a multitude of poor men who might never resort to a distant place of education. They set learning in a visible form, plain, indeed, and humble, but dignified even in her humility, before the eyes of a rustic people, in whom the love for knowledge, naturally strong, might never break from the bud into the flower but for the care of some zealous gardener. They give the chance of rising in some intellectual walk of life to many a strong and earnest nature, who might otherwise have remained an artisan or storekeeper, and perhaps failed in those avocations. They light up, in many a country town, what is at first only a farthing rushlight, but which, when the town swells to a city, or when endowments flow in, or when some able teacher is placed in charge, becomes a lamp of glowing flame, which may finally throw its rays over the whole state in which it stands.
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> In some of these Western colleges one finds to-day men of great ability and great attainments; one finds students who are receiving an education quite as thorough, though not always as wide, as the best Eastern universities can give. I do not at all deny that the time for more concentration has come, and that restrictions on the powers of granting degrees would be useful. But one who recalls the history of the West during the last fifty years, and bears in mind the

tremendous rush of ability and energy towards a purely material development which has marked its people, will feel that this uncontrolled freedom of teaching, this multiplication of small institutions, have done for the country a work which a few state-regulated universities might have failed to do. The higher learning is in no danger. The greatest universities of the East, as well as one or two in the West, are already beginning to rival the ancient universities of Europe. They will soon have far greater funds at their command with which to move towards the same ideal that Germany sets before herself; and they have already what is better than funds — an ardor and industry among teachers which equals that displayed fifty years ago in Germany by the foremost men of the generation, which raised the German schools to their glorious preëminence.

The Period of University Development, 1865-96

Reforms in higher education in the United States were pioneered by three distinguished men: Thomas Jefferson, George Ticknor, and Francis Wayland.

Thomas Jefferson, who early interested himself in the subject of education, caused some reforms to be made in William and Mary college about the close of the Revolution. When in Europe, as minister of the United States to France, he studied the subject in its general bearings, and returned home filled with new ideas and new enthusiasm. After his retirement from the Presidency, he matured a plan of State education for Virginia, which, in 1817, he thus outlined in a letter to George Ticknor:

I am now entirely absorbed in endeavors to effect the establishment of a general system of education in my native State on the triple basis, — 1. Of elementary schools which shall give to the children of every citizen, gratis, competent instruction in reading, writing, common arithmetic and general geography; 2. Collegiate institutions for ancient and modern languages, for higher instruction in arithmetic, geography and history, placing, for these purposes, a college within a day's ride of every inhabitant of the State, and adding a provision for the full education, at the public expense, of select subjects from among the children of the poor, who shall have exhibited at the elementary schools the most prominent indications of aptness, of judgment, and correct disposition; 3. A university in which all the branches of science deemed useful at this day shall be taught in their highest degree. This would probably require eleven or twelve professors, for most of whom we shall be obliged to apply to Europe, and most likely to Edinburgh, because of the greater advantage the students will receive from communications made in their native language.

While this grand programme failed, Jefferson still lived to become the founder of the University of Virginia, which opened its doors to students in 1825. The fundamental idea of this institution was the organization of separate schools, each with its own instructors, in which a degree was conferred, calling the recipient a "graduate" of this school, and without reference to other schools, and sometimes, but not always, carrying with it a title, as doctor of medicine, bachelor of law, etc. Accordingly, the University has been described as "a collection of schools, each devoted to a special subject, but under a common government." The plan involved the abolition of a prescribed curriculum and of the class system, and the recognition of specialization and election of studies, as far as the resources of the University permitted. At the South, the University of Virginia has exerted a powerful influence; but at the North its influence has been little felt. Originally there were seven schools in the University; the number has now greatly increased.

Early Educational Reformers

In 1819 George Ticknor entered upon the duties of the chairs of the French and Spanish languages and belles-lettres at Harvard College. He had spent the preceding four years in European study and travel, and returned home thoroughly familiar with the German universities. He soon began to agitate reforms at Harvard, and, mainly owing to his influence, some changes were resolved upon in 1825. Ticknor contended that the colleges of the United States had long been considered merely places for obtaining a degree of bachelor of arts; that recitations were mere examinations, while study and teaching were extremely superficial; that the class system prevented those who wished to investigate from doing so, since the class must be kept together and be hurried from teacher to teacher and from subject to subject. He wrote: "We have now learnt that as many years are passed in our schools and colleges in professional preparation as are passed in the same way and for the same purpose in the best schools in Europe, while it is perfectly apparent that nothing like the same results are obtained; so we have only to choose whether the reproach shall rest on the talents of our young men, or on the instruction and discipline of our institutions for teaching them." For himself,

he did not hesitate to place it on the schools, by no means omitting the colleges.

The changes ordained in 1825 are thus described: "The division of the whole institution into departments, with the right of a limited choice of studies; the separation of the members of the class for their exercises according to their proficiency, so that each division might be carried forward as rapidly as was consistent with thoroughness, every man having a right to make progress according to his industry and capacity; and the opening of the college to those who wished to pursue special studies without taking a degree." But the professors, only one of whom besides Mr. Ticknor, Edward Everett, had studied in Europe, were committed to the old hard-and-fast college scheme, and so in a few years the reform, save alone as it affected Mr. Ticknor's work, was for the time abandoned. When Ticknor resigned his professorship in 1835, he assigned as one reason, that he had abandoned all hope of further change in the college. The present president of Harvard University has called Ticknor a "reformer fifty years in advance of his time." The radical changes which have been effected at Harvard within the last quarter of a century justify his forecast.

The third reformer is President Wayland of Brown University, who published his "Thoughts on the Present College System in the United States" in 1842. He recommended changes in the character of governing boards and in the mode of appointing instructors. He contended that professors should be appointed by competition; that their tenures and salaries should depend upon their labors and success, and that means should be provided for their removal from their chairs if they proved incompetent or unfaithful. But his most radical ideas related to the course of instruction.

President Wayland held that,—1. The standard of admission to college should be raised; 2. The instruction in the college should be made more thorough, even at the cost of limiting the number of studies, or of extending the period of residence to five or six years; 3. That the college should be developed into a university. He suggested the addition of the degree of bachelor of science, or of literature to the old A.B. degree. Dr. Wayland desired more freedom and scope for both students and teachers; he did not believe in time-limits, but in fixing the standard of scholarship, and then taking time enough to work up to it. In 1850 Dr. Wayland made his celebrated "Report to the Corporation of Brown University on Changes in the System of Collegiate Education," in which he developed his ideas more in detail. The key-note of the report was freedom. "The various courses should be so arranged that, in so far as it is practicable, every student might study what he chose, all that he chose, and nothing but what he chose. The faculty, however, at the request of a parent or guardian, should have authority to assign to any student such courses as they might deem for his advantage." An immediate effort to carry out some of these ideas at Brown University was made; but the force of this effort did not survive Dr. Wayland's retirement from the presidency in 1855.

Just what were the relations between these three educational reformers, it is hard to say. It is well known, however, that Jefferson and Ticknor were personal friends, and corresponded, and it is to be presumed that each one learned something from the other. Dr. Wayland also visited the University of Virginia.

From the year 1825 onward there was, as can now be clearly seen, looking backward, a slow, progressive movement in higher education, taking the country as a whole. The University of Virginia never fell back from the advance ground that it first assumed. The poet-professor, Longfellow, who had studied abroad, succeeded to Ticknor's chair at Harvard College, and continued the work on the same lines. Moreover, with an occasional backset, as during the administration of Dr. Sparks, Harvard, as a whole, moved slowly in the right direction until the inauguration of President Eliot in 1869. Dr. Eliot was an apostle of the new education, and immediately entered on that policy of change which has so thoroughly renovated Harvard University. In his report for 1883–84 he announced the extension of the elective system to the freshman year, which he styled "the practical completion" of a development which began sixty years before. This extension left as the sole prescribed studies in the college, one year of rhetoric, English composition, German

or French, and one year of physics or chemistry. Save alone the English composition, these requirements have since been abolished. These innovations have been strongly resisted both inside and outside of the college, but they have apparently become permanent in themselves, and have certainly exerted a great influence upon the country.

New Educational Movements In the meantime a new movement was preparing in the West. From the return of Everett and Ticknor to Harvard, laden with the spoils of German learning, American students, in slowly increasing numbers, went to the German universities to study, and returned home more or less Germanized in both scholarship and educational ideals. Previous to 1850, about fifty such students studied at Göttingen, and as many more at Berlin. Many of these men became professors in American colleges and universities. At the same time, German ideas were reaching the public mind, through the medium of reports, pamphlets, lectures, and the like. The American educational renaissance, to which many causes contributed, began about 1835. In 1831 M. Victor Cousin made his celebrated "Report on the State of Public Instruction in Prussia" to the French Minister of Education, and four years later a translation of this report was published in New York. A copy of this document, either in the original or in English, made its way to the forests of Michigan, and, falling into right hands, shaped the foundations of the educational system of that young State. The constitution of 1835 recognized the so-called "Prussian ideas"; viz., three grades of public instruction, created, maintained and supervised by the State.

The University of Michigan dates from 1837—the year that the State came into the Union. At first, so great is the force of tradition, the University was organized and conducted on the old-fashioned college lines; but with the coming of Dr. Henry P. Tappan as president in 1852, there entered into it a new potency, which in course of time changed it into a thoroughly modern institution of learning, the influence of which has been widely and strongly felt. The University of Michigan has been the type to which all the really vigorous and subsequent State universities have conformed more or less closely. Reference has once been made to the State universities as introducing a secular factor into the higher education. This fact, together with the possession of comparatively large resources, has given these institutions an influence in many of the Western states that has been very powerful, if not controlling.

Later University Expansion The Civil War gave education of all kinds a tremendous impetus. The States became more liberal and enterprising than before, private individuals more public-spirited. For the last thirty years it has been no uncommon thing during a single year to register an addition to the private educational benefactions of the country of ten million dollars. Several new and prominent institutions owe their origin wholly to private initiative, or to joint private and public initiative. Mention may be made of Cornell University, which opened its doors in 1868; Johns Hopkins, 1867; Vanderbilt, 1875; Leland Stanford, Junior, 1891; and Chicago University, 1892. All these institutions, and many more beside them, have been organized on modern lines, some of them *very* modern. Meanwhile, many old institutions have extended and strengthened their work, as Dartmouth College, Yale College, now Yale University, Columbia College, now Columbia University, the University of Pennsylvania, and Princeton College, which has recently become a university. The endowments and incomes devoted to higher education have grown wonderfully. In 1842 President Wayland spoke of the great amount of money enlisted in higher education in New England, asserting that it amounted to $1,500,000,—a sum, be it remarked, that at present would not pay the annual expenses of the two foremost New England institutions of learning.

The general development need not be followed further; but it is important to set down the distinctive features of current higher education in the United States: 1. Freedom; elective studies; 2. The wide expansion of curricula; 3. The growth of Faculties; 4. Laboratory methods of instruction; 5. The use of the lecture method; 6. The employment of the seminary, which stands for research on the one side, as the laboratory does on the other; 7. Graduate study, leading to the higher degrees; 8. The differen-

tiation of degrees, as A.B., Ph.B., B.S., and B.L.; 9. Freedom in respect to discipline, the old proctorial method having been very generally abandoned; 10. The growing conviction that a university, at least, is primarily a place for study and teaching, and not for the formation of moral or religious character; 11. The decline of the sectarian spirit, involving often the decay of ecclesiastical ideas and influence (although these ideals and influence are still strong in many denominational schools).

Women's Higher Education Two or three topics should receive something more than mention. One is the growing participation of women in the higher education. Although it is little more than fifty years since the contention for such education began, the battle is already fully won. Women are admitted to the advantages of the higher training and culture in three ways: Colleges for women, as Wellesley, Smith, and Vassar; co-educational institutions, as Oberlin College (which was the first college to open its doors to women); and the State universities and "annexes," or colleges for women, affiliated with old institutions, as Ann Radcliffe College at Cambridge, and Barnard College at New York. In 1892–93 as many as 310 co-educational colleges reported to the Bureau of Education, with 27,317 male and 11,583 female students. The same year, 141 colleges for males only reported 20,130 students. The co-educational colleges included schools that threw open any or all departments to both men and women. The same year, 143 colleges for women reported 16 of higher and 127 of lower rank. The schools of the first class reported 4,023 students, the second class 18,926, or a total of 22,949.

A second topic is the multiplication of schools for teaching science and technical studies, and the elevation of their standard of work. Sometimes these schools are integral parts of larger institutions, as the Lawrence and Sheffield schools at Cambridge and New Haven; sometimes they are wholly independent, as the Massachusetts Institute of Technology. Different institutions have quite different ideals. The agricultural colleges are doing a good work for agriculture, but experience proves that they do not educate many farmers.

Professional Education The last topic is professional education. Under the old *régime* the candidate for the ministry, after taking his A.B. degree at college (which was, as we have seen, a semi-theological institution), pursued his theological training in some minister's study; while lawyers and doctors obtained nearly all their professional training, the first in lawyers' offices, the second in doctors' offices. In these particulars, ideals and methods have almost wholly changed; the best work in the learned professions is now done in professional schools. There were professors of divinity in the old colleges, but the first theological school was established in connection with Rutgers College, in 1784.

Andover dates from 1807, Princeton, 1811, Harvard, 1817, Union, 1836. In 1892–93 there were 142 schools of theology in the country, with 7,836 students and 1,502 graduates. George Wythe is the first professor of law of whom we read (William and Mary College, 1779). The first law school was founded at Litchfield, Connecticut, in 1782. The Harvard school dates from 1817. In 1833 there were six law schools, with 150 students. In 1892–93 there were 63 such schools, with 6,776 students and 2,400 graduates.

The first medical school in the United States was founded in Philadelphia, in connection with the university, in 1765. The Harvard school dates from 1783. In 1892–93 the Commissioner of Education published the names of 246 schools of medicine, dentistry, pharmacy, and for nurses and veterinarians, with 28,900 students and 7,232 graduates. Beyond the learned professions this account need not go.

Upon whatever career a youth may enter, once remarked Prof. Huxley, intellectual quickness, industry, and the power of bearing fatigue are three great advantages. As a general rule, the relative importance of these three qualifications is not rightly estimated; and there are other qualities of no less value which are not directly tested by college competition. A somewhat varied experience of men has led me, the longer I live, to set less value upon mere cleverness; to attach more and more importance to industry and to physical endurance. Indeed, I am much disposed to think that endurance is the most valuable quality of all; for industry, as the desire to work hard, does not come to much if a feeble frame is unable to respond to the desire.

THOUGHTS ON KNOWLEDGE, LIFE AND WORK:

V.—OUR WORK AND HOW TO DO IT

THE philosopher Kant, at the close of his great work on the "Critique of Pure Reason," has said that the ultimate object of all inquiry is to give answers to three questions: What can I know? What ought I to do? What may I hope for? The third question, Dr. Huxley said, we might safely leave, letting consequences take care of themselves, so long as actions are right. But in point of fact all these questions are resolved into the second of the three, "What ought I to do;" whilst the other two cannot safely be overlooked, since in some cases we can tell what is our duty only by considering the consequences of our actions, and in all cases our responsibility is limited by our knowledge and ability. It can be no man's duty to perform the impossible or to act upon the unknown. On the other hand, it is quite true that, when duty has become clear, we may safely leave the question, What am I to expect? to solve itself, which it will do with strict legality.

Three Questions

Our Work

I. What ought I do? What is my proper work in this world? No sane person doubts the supreme importance of that question, since it does, in reality, contain within itself every other great question. "Know what thou canst work at," says Mr. Carlyle in his "Past and Present," "and work at it like a Hercules." And it is a question which concerns every one, whatever his particular views or convictions may be. Thus to many it will obviously be a very serious religious question; but, besides this, it concerns every one who lives in human society, every one who acknowledges duties to his fellowmen — and if we have no duties, we have no rights. This, then, is the subject which we are here to consider, what is our own particular work and business on earth, how we may find it out, and how we may do it.

Every One Bound to Work

1. We begin by laying down the principle that every one who is born into the world is bound to do some part of the work of the world, and actually has some vocation which he is bound to recognize and to fulfil. And further, that the doing of such work is not only a man's bounden duty, but his greatest happiness as well.

Errors

Great mistakes are made, and very false notions prevail, on the subject of labor. By many labor is looked upon as a misfortune, instead of being regarded as a blessing. Idleness, which is one of the most shameful and disgraceful things in the world, is often considered to be a mark of distinction. In vain do reason, experience, and religion denounce these fatal heresies. Human sloth, conceit, arrogance are often too powerful to be overthrown by the might of truth. The poor man is apt to regard his daily labor as a simple misfortune, or even as a curse, and to look with envy upon his better endowed neighbor, who has no need to work in order that he may live. He takes no notice of the penalty of idleness; he knows the inconveniences, but ignores the many blessings, that are connected with faithful toil; and he forgets how ill it has fared with some of his class who have been suddenly relieved from the necessity of daily toil, and how seldom they have been made better or happier by the change.

A similar mistake is made by the wealthy man who despises the toiler, considers himself a superior person because he is under no necessity of laboring, and would even regard the obligation to work as of the nature of a personal degradation. Such an one forgets that it is to work — work done by others before his time — that he owes his own emancipation from the necessity of working. It is by labor that the wealth has been accumulated which he now enjoys and by which he is supported. In his stupid thoughtlessness and insolence he is despising the very power which has raised him to his place of preëminence, and honoring the vice which has placed his brother beneath him in the social scale.

Work, the Law of the Universe

Work is the law of the universe; and this is true whatever theory of the world we may hold — whether we regard it as the ex-

pression of an infinite Intelligence, or the result of an unknown Force. Man is, at least, the highest known expression of the life of the world, and may be expected to do the highest work. The life and powers and energies of his nature are not his in order that they may lie dormant. All idleness, therefore, is a failure to realize the possibilities of his nature. There is no place for idleness in the universe. Even rest is but a means of refreshment in order to renew toil. May we not point to one Supreme example of the dignity of labor in Jesus of Nazareth? In His whole life and in all its circumstances He read us this lesson. He was not born in a king's palace, nor laid in the lap of luxury, nor ever emancipated from the obligation of work. "My Father worketh even until now," He said, "and I work." He was a working man, and so were all His truest and greatest followers. The chief of them worked with his own hands at the same time that he was carrying on other work which might well tax all his energies.

Labor develops Powers

Considerations of the kind adduced will appeal with varying force to different minds. But there are certain facts and principles in this connection which can hardly be misinterpreted or misunderstood by any careful observer, whatever his antecedent convictions or prejudices. Thus, it is quite certain that it is exercise—or labor, which is the same thing—which develops and perfects the powers with which we are endowed. It is by means of exercise that our bodily frame grows up to its normal size and proportions. Each limb puts forth its strength as it is called into exercise; and if any part or member of the body is neglected, it is stunted and maimed. So it is with the powers of the whole man, soul and body alike. We have only to let them lie torpid in order to paralyze them, perhaps ultimately to destroy them altogether. We must live before we can work; but life which does not express itself in work, in energy, speedily sinks into a state which is no better than death.

A Source of Happiness

So, too, labor is a source of pleasure and of happiness, and this in different ways. We have been warned, from our earliest days, of the "mischief" which is found "for idle hands to do"; and there can be little doubt that some would have been better men if they had had more work, and some would have been worse if they had had less. But this is only one, and the less important, side of the matter. There is a positive blessing and joy and delight in work. This is no new discovery; it is as old as Aristotle. "Pleasure," he says,* "perfects the activities; it therefore perfects life, which is the aim of human desire. . . . It appears that pleasure and life are yoked together and do not admit of separation, as pleasure is impossible without activity, and every activity is perfected by pleasure."

A Contribution to Human Need

Nor is this all. Labor is, moreover, a contribution which every one is bound to make to the needs and requirements of the world. No one can refuse to pay this, which is a lawful debt, without incurring the charge of dishonesty. So long as we live we are sustained by the products of labor. By the law of our being, labor is a necessity. If, then, we refuse to make our contribution to the common stock, we are robbing mankind by living on the fruits of other men's labors.

Carlyle has some strong and trenchant words on the subject,† which are so well known that we need only refer the reader to them. They tell us that he can honor only two men: on the one hand, the toil-worn craftsman, on the other, the man who labors for the Bread of Life. Better still, if the two are found in one. So much may be said of work in general.

Our Special Work

2. We must, however, somewhat narrow our view and point out that every man has *some special work* to do in the world. Each one has his own place, circumstances, relations, opportunities. The world has need of many different kinds of work, and there are persons qualified for the doing of these works. In the infancy of the race there was very little division of labor. But as civilization advances and man's needs are enlarged, this becomes a convenience and a necessity. Humanly speaking, the population of the world, growing day by day, could

* Eth. Nicom. x., 4, 5.

† Sartor Resartus iii., 4.

not be supported without a return to something like savagery, unless this division of labor were observed.

It has, therefore, long been obvious that, if a man is to be of any considerable use to himself or others in the world, he must devote himself to some particular calling, and make himself, as far as possible, skilled in some particular work. There are not a great many "admirable Crichtons" in the world; and a man who attempts to do everything will generally end by doing nothing well. Examples could easily be found.

No Narrowness; but Unity

Such concentration of purpose and aim is widely different from that narrowness of sympathy and of culture which is incapable of taking any interest in the work of other men. Such narrowness is repulsive and wearisome. Yet we cannot withhold our admiration from those men who make all their efforts and energies bear upon the special aim which they have set before them, even when they carry the tendency to excess. "This one thing I do" is a noble motto for the worker; but it is best and noblest of all when it means not the neglect of other men and their interests, but the subordination of all thought and effort to the main object and endeavor of his own life.

Whether the Work seem Small or Great

It may be that the work which seems appointed for us has no ambitious character or splendid appearance that will dazzle the eyes of men or attract their admiration. It may be the simplest, the most obscure, and yet, for all that, it may be most useful and therefore most dignified. Let young men and women lay this thought to heart. It is given to few of us to do a kind of work that will bring us fame or a great name in the world. It is generally wrong for us to desire such a name or the work that would bring it. It is the fulfilment of duty alone that can bring us true honor; and all fame or glory which comes to us in any other way is hollow and false.

Honor and shame from no condition rise;
Act well your part, there all the honor lies.*

How, then, shall we determine *what our work shall be?* For many this is no longer an open question. Wisely or unwisely we have chosen our life's work, and it is seldom wise for a man to change his profession. But there are others who have not yet made this choice; and some help may be afforded them towards forming a decision which will have life-long consequences.

Lawful Work

II. 1. It is a fundamental principle of such a choice that our *work should be lawful work.* This is a principle which is upheld by every consideration which should weigh with a thoughtful and conscientious mind. Self-interest alone would make such a demand. A business which is unlawful will seldom be remunerative. Honesty is the best policy. It is often said that if our clever rogues would exercise the same ingenuity, industry, and perseverance in following a lawful calling as they display in their evil-doing, their worldly success would be triumphant. But there are better reasons than these. The voice of conscience is nobler than the counsels of self-interest. Even those who refuse to recognize the sanctions of religion will admit that a man must obey his conscience if he would preserve his self-respect. Let young men seriously consider these things before they enter upon the path they intend to pursue to their life's end. Whatever else they may think of being or doing, let them do nothing which will degrade them in their own eyes. "Happy is he who condemneth not himself in that thing which he alloweth."

Not Involving Scrupulousness

At the same time we ought not to encourage a nervous and excessive scrupulousness, which sees evil and mischief in many things which are perfectly harmless. Such over-scrupulousness is not evidence of a tender and healthy conscience, but of one which is morbid and perverted. And this is quite unnecessary. There are quite enough deflections from the straight road without inventing imaginary ones. If a man sincerely believes any particular calling, such as the manufacture of tobacco or beer, to be mischievous or useless, then he does well to abstain from it. "Whatsoever is not of faith is sin." Let him not, however, condemn his neighbor who may be unable to perceive the value of his scruples.

* Pope, Epist. 4, l. 193.

Not Unscrupulousness

This is not, of course, meant to encourage unscrupulousness. There is the happy mean of conscientiousness lying between; and, as has been said, no man can preserve his self-respect in life and work who does not listen to the voice of his inward monitor. And there are many aids by which its testimony may be rendered more clear and strong. To our own convictions we may add the experience of the world and the judgments of the best and the wisest of men who have gone before us; and we are not very likely to go wrong.

Work should be Useful

2. A second rule, and one which is closely connected with the first, requires that our labor should not only be lawful, but that it should also be useful, to ourselves and others. Lamartine once declared that "it is a matter of very little consequence *what sort* of work we are engaged in," provided that we do really work. Of course there is a small measure of truth in the remark. A man who really works will very soon find out whether he is doing well or ill; whether in short his work is productive. He will hardly go on forever weaving cobwebs or drawing water in a sieve. This is the measure of truth in Lamartine's saying; but it will be better that we should, from the beginning, try to do useful work.

Personal Qualifications and Inclinations

3. Another consideration which may determine our course in life is found in our personal *endowments*, *qualifications*, and even, to a certain extent, in our *indinations*. What a man *ought* to do must depend greatly upon what he *can* do. Some Christian rigorists have forgotten this, and spoken of duty as absolute, apart altogether from ability. It is not easy to imagine a theory which should be more destructive of a true sense of responsibility. We must hold, if we are rational, that responsibility is limited by ability, that a man is accountable up to the measure of his strength. Certainly also our natural qualifications should always be allowed great weight in determining the kind of work which we decide to undertake. Some one has said that a man enjoys doing work which he does well. But it is equally true that a man is more likely to do his work well, if he enjoys the doing of it, and if he feels a fitness for it and a tendency towards it. How many men would have escaped the pain of failure, if they only had regard to this simple dictate of common sense! How many a man might have employed profitably and fruitfully time which has been utterly wasted, if he had only considered how many things there were which he was capable of doing, and that there were some which he was very unlikely to do well!

Circumstances of our Life

4. One other consideration should certainly not be overlooked, namely, the *actual circumstances of our life*, which, to a religious mind, will also be the leading of Providence. In most cases this is the safest guide; in many cases it is the only guide. There are many persons who seem to have no special aptitude for any particular kind of work, who would yet do almost any ordinary work fairly well, if they could only come to see that it is their duty, and would give their minds to it. In such cases it might be well to give a piece of advice which may seem unambitious in its tendency, yet may also turn out to be sensible and practical: "Do what you are set to do, and do it as well as you possibly can, and your life will be honorable and even dignified."

Failures

People often imagine that because they have failed in life, or done their work very indifferently, they have therefore mistaken their calling, and that they would have succeeded in some other business or profession. Many of us have been tempted to think that we might have excelled in some work which we had no opportunity of attempting, even although we had never gone beyond mediocrity in what we had actually done. Undoubtedly there are such cases. Carlyle laments that the world could find no better work for the poet Burns then setting him to gauge ale-barrels. But these cases are exceptional. Few men have the right to assume that the case is their own. Very few men will be justified in thinking that the reason why they have not succeeded in life is to be found in their mistaken choice of work. Generally it will be safer to attribute their failure to their not having done their work better and more carefully. A man who does one

thing badly is likely to do many things badly. A man who does his own work well would probably do many other things well, if he had them to do. Dean Stanley relates that, when he was appointed to a canonry at Canterbury, he one day met Mr. Carlyle, and asked him if he could offer any hints as to the way in which he could best use his new position for the good of his fellow-men. He could not have been surprised at the answer which he received: "Whatsoever thy hand findeth to do, do it with thy might." One who is willing to work will find out for himself the best way of turning his energies to account. "Do the duty which lies nearest to you," says the Eastern proverb, "the next will already have become clearer."

Doing of Our Work

III. One other aspect of the subject still remains for consideration, namely, the *doing of our work*. Having made our choice as to the kind of work which is to be specially our own, we have now to consider how we should set to work and do it.

It is Worth Doing Well

1. We may begin with one rule, very simple and almost self-evident, which, nevertheless, is frequently forgotton. *What is worth doing at all is worth doing well.* Rightly understood this statement will be generally accepted; yet there are thousands who do not act upon it. Every day people are heard justifying their carelessness or neglect by the argument that it is a matter of no importance. But it was either worth doing, or it was not worth doing; and it should either be let alone or done properly. And the meanest duty may be done well or ill. We don't, of course, mean that all work is equally valuable, or that every duty should have the same amount of time and toil bestowed upon it. This would often be to withdraw energy from other and more important employments. But everything should be done according to the necessities of the case, carefully and effectually. The man who begins by doing *anything* badly and being satisfied with so doing, is in great danger of ending by doing nothing well. And this applies especially to those who toil at what are called the lower employments of life, and who must often feel that they are fit for something better. When once we have got convinced that it is our duty to occupy a certain post, that here, and nowhere else is our work, then let us believe that this is what our hand was intended to do, and let us do it with our might.

Excellence of Good Work

2. A powerful incentive in the same direction may be found in a consideration of the *intrinsic excellence and beauty of all good work*, of what ever kind the work may be —whether hand work or brain work, whether the work of the chisel, the graving tool, the pencil, the brush, or the pen. May we not say that this is a motive of a very high order? In childhood our first thought, apart from our own gratification, is to please our parents, our friends, our neighbors. It is a motive which is in itself excellent and commendable, and which is never without influence on the better kind of men and women. We meet with this thought in most workers; and it is embalmed in the writings of the greatest of men. It speaks in touching language in the Preface to the great Dictionary of Johnson. "I may surely," he says, "be contented without the praise of perfection, which if I could obtain, in this gloom of solitude what would it avail me. I have protracted my work till most of those whom I wished to please have sunk into the grave, and success and miscarriage are empty sounds."

In youth we are possessed by the spirit of emulation, and it would be wrong entirely to discourage this sentiment; but it is one which does not live with the best men. "As we grow older," it has been well said, and the speaker* might have added, as we grow wiser, "we care less to surpass others, and more to do our own work well." The man who cannot understand words like these can hardly have appreciated the dignity and responsibility of work. And what a delight is good work to those who behold it! "A thing of beauty is a joy forever." And this is emphatically true of a thing of beauty which is the product of human labor. The sculptures of ancient Greece are to this day, and will be through all ages, the delight of the world and models for the artist. The pictures of Italy of the Renaissance grow more precious day by day, as their transcendant beauty is more widely and more deeply recognized.

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*The late Earl of Derby, at Edinburgh.

But it is not merely with works of high art that the sentiment is associated. The tools which we use every day in the ordinary occupations of life, the objects which lie around us in our homes, are sources of constant pleasure or annoyance to us. The makers and framers, known or unknown, are objects of gratitude or of censure, it may be, long after their work on earth is finished.

And if the work itself affords so much pleasure to others, no less does the doing of it delight and gratify the beholder. Who is unacquainted with the emotions excited, on the one hand, by the sight of the bungler at work, on the other by that of the skilled workman? And this difference enters into every department of human employment. Men stand aside when they are in the presence of a master-mind; they instinctively surrender their tools into a master-hand. This point is strikingly illustrated by a story which is told of great military leaders in the French war of the *Fronde*. Turenne, the greatest soldier of his time, was at the head of the royal army. Condé, who was second to him alone, had been absent from the rebel army which at that time he commanded. After a brief suspension of hostilities the rebels changed their position and made an attack upon the royal troops. When Turenne saw the style of the enemy's advance, he exclaimed, "Ah, Condé is there!" There was no mistaking the master's hand in the movement of the troops. Least of all could it be hidden from one who was himself a master of that art.

How to obtain Excellence

3. So far there will probably be little difference of opinion. But we are apt to forget that such excellence is not attained without an amount of *arduous*, *careful*, *earnest work* which the majority of men are unwilling to undergo. We do not mean that good work cannot be done with ease. But it is so done because the doer of it has spared no pains in learning his art. On few subjects are so great mistakes made. Many seem to imagine that skill is merely the result of genius without the necessity for anything like hard work; others, that no amount of labor is of any avail unless the worker is endowed with genius. We certainly do not suppose that all men start in life with the same capacities. There are the greatest differences between one man and another. But we must still assert that no man ever yet attained to excellence and distinction without giving his mind, his heart, and his hand — his very best energies, in short, to the work which he had undertaken. Genius has been defined as a "transcendant capacity for taking trouble."

Need of Labor

On the subject of the necessity of labor there is an unanimous consent on the part of all the greatest thinkers and workers. Plato quotes with approval the saying of Hesiod, "The gods have set sweat before virtue." True excellence can be attained, he says, only through toil. Virgil declares that the great Father of agriculture, the Supreme Being, has not willed that the way should be easy for his workmen:

> Pater ipse colendi
> Haud facilem esse viam voluit.

Goethe, who is thought to have produced about the best German prose ever written, testified that no line of his ever came to him in his sleep; and no different testimony will be given by any who have ever attained to excellence in any department of human effort.

Success of Labor

On the other hand, it is no less true that real earnest toil hardly ever fails to ensure a certain degree of skill in the worker and excellence in the work. The way is sometimes long and arduous, but it is never trodden patiently without leading to some measure of success. History is full of examples of men who have, in this way, surmounted the greatest obstacles. The name of Demosthenes occurs to us at once. He was perhaps the greatest orator that the world has ever known. Chiefly by reason of this power he became the ruling influence in Athens and in Greece during a great part of his public life. And to this power he attained, in spite of great natural defects, by the sheer force of unwearying toil and indomitable perseverance. Nor is it merely in the distant past that such examples are found. Every age knows of them, knows too of men of comparatively slender abilities who, by a conscientious use of such talents as they possessed, have attained to great success and even to high excellence; even as it has also known of others who in their

youth were full of promise, yet who, by sloth and indifference, have suffered their energies to be frittered away and their native powers to perish.

4. Two special suggestions may be offered on this point (1) on the importance of method, and (2) on the necessity of attention to minute details.

Method

1. It is of the first importance that our work should be done in an *orderly and methodical manner*. This necessity is differently estimated by different men; and differently recognized practically. There are men who seem to have no beginning, middle, or end to their work. They take it up anywhere and anyhow, and go on in any kind of disorder. This accounts for the large amount of loose thinking which prevails in the world. It starts from no well-ascertained premises. It conforms to no recognized principles of thought. It is tossed to and fro by its own incoherency. It embodies contradictions, which are mutually destructive, and so it leads to no certain results and produces no settled convictions. It is the same with some men's work. It is done with no method, it is carried on with no sort of order, and consequently it is marked by no real progress. It is superfluous to remark that nothing of any value has ever been accomplished in this manner.

Illusions

What mistakes are made on this subject by weak and thoughtless men! Some indeed seem to imagine that all this carefulness is a sign of littleness of mind, and that want of method, and what seems to them a kind of picturesque disorderliness, are signs of greatness. "It is your little men," so they reason, "who are neat, orderly, methodical; a great mind cannot descend to such trifles." And they, not being little, cannot condescend to such methods. As though the Alexanders, the Cæsars, the Fredericks had developed their military genius and gained their splendid victories by carelessness and inattention! Was there anything like haphazard in their military operations? Doubtless a great part of the power of a general lies in his being able to inspire his men with confidence and enthusiasm. But this very confidence is, in no small measure, begotten by the conviction on the part of the men that their leader will do the best that can be done. They know that he will see at a glance where and when and how to strike, so as to make the best and most effective use of the instruments at his disposal. His commands will not be experiments; they will be subject to the law of necessity. Just as there is a best place for every piece in a game, so in the game of war, or any other game or work, order is heaven's first law. And the man who cannot decide to master himself, to submit himself to methodical action and labor, is refusing to take the first step towards success or excellence in whatever work he may have in hand.

Little Things

2. Not remotely connected with the need of method is that of *attention to little things*. Here there is the same temptation to get absorbed in things which seem great and to overlook those which seem small and insignificant. It is a natural error, but one which often has very serious consequences. Illustrations abound. Imagine a machine in which some minute part is wanting or imperfect, and you can also imagine great danger to property and life and limb. A very small aperture in the side of a great vessel may speedily become enlarged and bring ruin to the ship and death to the passengers. No one has ever attained to success in practical matters who neglected attention to little things. Frederick William I., of Prussia, the father of Frederick the Great, was said to have such a perfect knowledge of his army that he knew where the accoutrements of every regiment and every soldier were to be found, and, accordingly, when his greater son came to the throne, he found ready to his hand an army not unworthy of his military genius.

Frederick himself was as careful of the least things as his father had been; and in his case, as in that of most men to whom the words apply, there was verified the saying: "He who is faithful in that which is very little, is faithful also in much." The man who fulfils the most insignificant of duties with conscientious care and zeal, will be likely to do the greatest things with energy and success. And it is by doing well in early days whatever duties may fall to us that we gain the knowledge, the ability, and the skill to do the greater duties which are then entrusted to us.

WILLIAM CLARK, D. C. L.

STUDIES IN ART, SCIENCE AND DISCOVERY:

MAMMALS IN THE WATER

THE otters, which one sees in Zoölogical Gardens, and which are unusually lively during the first days of spring, an observer, writing in an English journal, states, have conformed to the universal tendency to "extend the range of diet" by eating ship-biscuit as well as fish. They make believe that it is fish all the time, biting the biscuit into fragments, then pushing these into the water with their noses, chasing them and catching them, and after the biscuit is well saturated, eating it on the bank. Incidentally this shows how very prettily an otter eats its meals. It lies flat down, and holds the "fish" neatly between its hands, "thumbs upwards," the hands being quite flat, like the two ends of a book-slide. The quickness and handiness of the otter in the water is most surprising considering the very slight difference in general form between it and allied non-amphibious mammals; there is practically nothing which a salmon or trout can do which the otter cannot beat, except the salmon's leap up a weir. It can even imitate that astonishing "shoot" by which a trout goes off from its feeding-place like an arrow to the bank or weeds. It can also climb a pollard-tree, dig holes, dive in salt water, run fast on land, and *run* at the bottom of the water.

Compared with the aquatic powers of civilized man—the only mammal, except a monkey, which does not swim naturally — these feats are very surprising. But the list of land animals which are expert swimmers is very much larger than might be supposed. It also embraces many classes of animals, and the number of the aquatic or semi-aquatic members of very different families suggests that the aquatic habit was at first only accidental, and that very many creatures which do not by habit swim and dive might under other circumstances have become aquatic. Judging from our own experience, one of the most difficult "adaptations" of habit encountered in the amphibious life is that of keeping the eyes open under water, with no special protection. It is disagreeable in fresh water, and painful in salt water. Conceding that the regular amphibious creatures have learned to do this gradually—otters, water-voles, water-shrews, polar bears, and seals—how are we to account for the aquatic dexterity of a creature like the land-rat? A common brown rat can see under water as well as a water-rat can. It swims and dives equally well, and can burrow into a bank below the water.

This is less creditable engineering than the sub-aquatic work of the beaver, which buries logs and fixes the foundations of the dam under water; but it shows that the rat is quite at home in that element. The rat has no structural adaptation of any kind to help him, and the water-vole is to all appearance the same in structure as the land-vole. That there should be so little modification is quite contrary to the ancient and established view, that if an animal can swim and dive, it *must* be like a duck or a fish.

When Fuller was writing of the "natural commodities" of an English shire he remarked: "what plenty there was of beavers in this country in the days of Giraldus: the breed of them is now quite destroyed, and neither the fore-foot of a beaver (which is like a dog's) nor the hind-foot (which is like a goose's) can be seen therein." But the performances of the creatures, which are little or not at all changed in structure, are perhaps more interesting from the personal point of view of their human critics than those of animals like the seals, walruses, and whales, whose legs have turned into fins. Their experiences and difficulties in the water *ought* to be somewhat like our own. The surprising point is that most forms of movement in the water seem to present to them no difficulty at all. Very young otters are "taught" to swim, and so presumably are the young duckbills, which lie in a subterranean nest for several weeks before entering the water. But the young otters noticed at the London Zoo only needed to be hauled out by their mothers when they stayed in too long. They swam like young ducks, and the teaching was by example, not by instruction. When master of the art, the otter swims, not with all four feet,

but with the hind-feet, folding the front paws alongside its body. An observer has noticed that the water-voles (water rats) do the same. This agrees with the progress of human swimmers, who usually begin by making too much use of the arms and too little of the legs, but discover later on that the latter are the main aids in swimming either on or below the surface.

The otters are so far modified from the polecat tribe that they have webbed toes; the water-voles have not even this advantage over their land relations. It ought to follow from this that the latter could with a little trouble become aquatic. There is a great deal of evidence to show that there is no hard-and-fast line between land mammals and water mammals so far as this distinction rests on the *ability* to use both elements. Stoats, for instance, are excellent swimmers, and if put to it for food, would probably learn to catch fish just as the polecat is known to catch eels. Cats, which have an intense dislike of being wet, swim well, carrying the head high. Their distaste for aquatics does not extend to the larger cats. Tigers are fond of bathing, swim fast, and, in the case of the "river tigers" of the Sunderbunds, and the tigers near the coast of the Straits of Malacca, are constantly noticed in the water.

Whether the trained Egyptian cats, which were used to take waterfowl in the reed-beds by the Nile, ever swam when stalking them does not appear from the ancient pictures; but the extent to which the dog voluntarily becomes aquatic entitles some breeds to be considered amphibious. A dog belonging to a waterman living near one of the London ferries has been known to continue swimming out in the Thames for an hour without coming to land. It did this for amusement on a fine Sunday morning. Another riverside dog was taught to dive, and fetch up stones thrown in which sank to the bottom. This dog would pick out stones from the bottom of a bucket of water, selecting one which it had been shown before from a number of others. It had so far become amphibious that it could use its eyes under water.

In France otter-hound puppies are introduced to their aquatic life by setting their kettle of soup in a pond or stream, so that they must go in deep to feed. Soon they become as fast swimmers on the surface as the otter itself, though the physical advantages of submarine motion give the otter the advantage when it is below the surface.

As the land-rats and water-voles can swim and run below water, there is no reason to suppose that the various tribes of mice cannot do the same. The house-mouse swims on the surface as well as the rat; but it has apparently not yet learnt to dive. All the pachyderms can swim, and very many are as much at home in the water as on land. The story that pigs cut their own throats when swimming is a myth. To prove it, a whole family of pink pigs were chased into a fine muddy pond and made to swim across. They swam well, and the "contour line" of mud along their sides showed that their backs were above water as well as their heads. Elephants are almost as clever in the water as the polar bears. They can swim and *walk under* water without coming to the surface, keeping the trunk out of the water like a diver's tube. There is plenty of flexibility in an elephant's legs, enough to use in swimming; but the properly aquatic hippopotamus can scarcely be said to swim. It rises and sinks at will, but it habitually walks or runs on the ground at the bottom of the river.

Two South American river creatures seem quite arbitrarily aquatic, — the coypu, which might just as well be a land-rat, but is a water-rat "in the process of becoming" a beaver, and the capybara, which is a gigantic water guinea-pig. Each is quite at home in the rivers, and as the capybara is aquatic, there seems no reason why the guinea-pigs, or the Patagonian cavies, should not learn to swim and dive, if circumstances made it useful. Even man himself becomes almost amphibious in certain regions. Temperature permitting, he swims as well, and dives better, than many of the animals mentioned above, — better, for instance, than any dog. The Greek sponge-fishers and the Arab divers must have sight almost as keen below water as that of the sea-otter. They have even learnt, by practice, to control the consumption of the air-supply in their lungs. The usual time for a hippopotamus to remain below water is five minutes. The pearl-fisher can remain below for two and a half minutes. In a tank a diver has remained under water

four minutes. But temperature marks the limits of man's amphibious habits. Its effects seem less potent on other mammals in the water.

The amphibious beasts of the tropics — hippos, tapirs, elephants, and manatees — need warm waters to swim in. But in temperate Europe, or even in the Arctic seas, certain animals seem indifferent to constant wet, and the intense discomfort of "wet clothes" when out of the water. A polar bear is wet, literally, to the skin. The otters, though they have an inner coat, look thoroughly drabbled when out of the water. The land-rat's coat also becomes wet through. The latter avoids water in cold weather; but the otters sit cheerfully on the bank in winter frosts, or even in wind. So do beavers in a Zoo, but their lower fur is probably impervious to water. A piece of beaver fur, with the long coat taken off, was dry at the roots after soaking for two and a half hours in a basin. If the temperature of aquatic animals were naturally low, like that of a fish, their indifference might be explained. A hibernating dormouse is as cold as death; a tame rat, tested by a clinical thermometer, showed a temperature of 100°, and a live otter can scarcely be of lower temperature than a live cat or a Cape ratel. The caution, "These animals bite," seen posted up in Zoölogical gardens, precludes any effort at taking their normal heat. But that of a rat, which takes to the water freely when the March winds are blowing, is normal, and there is no reason to suppose that that of the otter is different.

As chill to the surface tissues is always dangerous to warm-blooded creatures, in the absence of an inner layer of fat, which the whale, and in some degree the polar bear, possesses, the fur must be the non-conductor which protects them. Water, unless in movement, is not a quick conductor of heat. The fur, aided by the outer and longer hairs which keep it in place, holds the water-jacket motionless, even if it reaches to the skin; and this "water compress" saves the animal from a chill. If the cold winds extract the warmth from it when standing wet through on land it takes to the water as the relatively warmer element.

INDIA-RUBBER AND THE SOURCES OF ITS SUPPLY*

INDIA-RUBBER is in a fair way to become one of the prime necessities of civilization. Numberless human beings, in the class which could not afford wet-nurses, owe their lives to the feeding-bottle. Everybody knows that in the last five years the use of pneumatic tires for cycles and solid rubber tires for horse-vehicles has enormously increased our consumption of this article; but, quite apart from that more obvious fact, india-rubber is daily being introduced more and more into all sorts of machinery. Highly competent judges say that if the output could be doubled within a year, so many new applications of the material would instantly arise, that the price would not fall appreciably. As a matter of fact, the export of Para rubber, says an English journal, has increased within the last twenty-five years from 5,600 tons to 20,000 tons; and the price fetched by the best quality has risen in England from 50c. to 75c. a pound. It is the one jungle product which society finds indispensable. Hundreds of men have racked their brains to produce a substitute, but none has in the least degree succeeded; and such attempts must be permanently discouraged by the knowledge that india-rubber exists in limitless profusion upon known spots of the world's surface which may at any time be made accessible.

In any of the swampy equatorial regions, where vegetation grows rank and sappy, so that a knife will slash through branches as if they were made of cheese, there is pretty certain to occur some one or two of the score of trees which produce rubber. Whole forests of them are known to exist in Central Africa, only waiting to be tapped. But the regions which produce them are precisely the regions most deadly to the white man; and when the rubber is made it has to come to the coast on the heads of negroes, and will not pay the cost of transport. When an accessible forest is discovered it pays like a gold-mine. A tree was discov-

* See the article on India-Rubber or Caoutchouc, in the Encyclopædia Britannica, vol. xii, page 835.

ered near Lagos, a British settlement on the west coast of Africa, which was believed to produce rubber; specimens of bark and foliage went home to Kew Botanical Gardens, London, and the authorities pronounced it the right thing. In 1895 the export began, and amounted in the year to 2,263 tons, with a value of $1,350,000 in round figures.

India rubber would seem to be the one certain source of wealth now locked up in Central Africa, and perhaps the most valuable thing that the region produces or can produce. Ivory is only a fancy article, and palm-oil has many substitutes. Gold no doubt exists there, but, in the first place, it is doubtful whether the pure negro can be made into a miner; and, in the second, gold is to be got in regions where white men can live. It seems, therefore, as if the special function of the tropics just now was to produce India-rubber, which is wanted everywhere and cannot be grown elsewhere. No cultivation is needed; Nature requires of man very little skill, scarcely any exertion, and only a reasonable avoidance of waste. Yet this is asking more than the African negro is at present able to give.

The great rubber-producing region of the world is the basin of the Amazon, which yields about two-thirds of the entire annual output. The quality of this rubber is immensely superior to all others; the best Para will fetch in England as much as 88 cents a pound; the worst African goes for under 25 cents. Brazil has, of courses an immense advantage in its great waterway; ocean-going steamers run twelve hundred miles up the Amazon, whereas every African river, except the Congo, has a bar at its mouth, and cataracts not far distant from the coast-line. On the other hand, the forests in Brazil seem even more impenetrable than in Africa. Not even such roadways as the African man-paths can be maintained against the encroachment of the jungle. But the native Brazilian race is incomparably more intelligent than the negro. Their caoutchouc is better prepared, and, what is far more important, they farm the trees as carefully as the Red Indians used to farm the beaver.

In Africa the rubber is generally produced not from a forest tree, as in Brazil, but from the *Landolphia*, which is a climbing shrub. The negroes deal drastically with this, and simply cut it down, and then get what milk they can out of it. So year by year the rubber trees are destroyed, and year by year the negroes have to go further afield to seek them. If they are left to themselves they simply cease to produce India-rubber, and there is an end of it. If they have the fortune to live in the happy Congo State a certain amount of the stuff is exacted annually from each village; when trees within reach are exhausted, the collector comes round, finds no rubber, and goes home with a string of ears and noses instead. No doubt the West Coast negro is a trying person to deal with, but these methods have been so long employed unsuccessfully that civilization, we hope, may discover a better way, and educate the black man instead of torturing him. One is sorry, therefore, to hear that at Lagos, where the rubber is being produced from a forest tree, the *Kicksia*, the natives have been allowed to overdrain the trees of their milky sap and stop its production.

The supply of rubber-producing plants in Central Africa is practically inexhaustible; but the number of places where they exist within easy distance of some export station is small; so far as our present knowledge goes. Yet, for the present, speculators will probably hasten to be rich, and if they hit upon a forest, will treat it like a mine, anxious simply to take out the maximum at the minimum of cost.

Whether England or any other nation, will ever make this a great branch of its tropical forestry remains to be seen. The Germans, with their usual thoroughness, have a strong scientific staff at the Cameroons. The English, in their usual make-shift way, content themselves with sending home to English botanical authorities for suggestions. But the Government of India have at last tried an experiment upon a great scale. No private firm, however wealthy, would embark upon the cultivation of india-rubber; the trees take a matter of twenty years before they can produce a dollar's worth. In addition to that, cultivation must occupy a huge extent of ground of such a nature that no European can enter it during the rainy season, and where the growth is so thick that twenty men might be tapping trees within a mile of the ranger, and he none the wiser.

Nevertheless, the Indian Government have a nursery of Para rubber-trees in Assam, extending over two hundred square miles, which will in time begin to yield; and if any department can control such a farm the Indian Woods and Forests bureau will.

It seems, perhaps, a likelier scheme to organize under Indian surveyors a forestry department in East Africa, where the trees exist in plenty. The industry is, of course not confined to Africa and South America; rubber comes from Assam, Rangoon, Borneo, Penang, and Madagascar, amongst other places, but last year's export from Lagos more than doubled the united output of all those that have been named. If we, says this English authority, are to stay in equatorial Africa, it will be a satisfaction to think that we can make some advantage out of it. What it costs to keep slavery in check from Uganda to Coomassie only European mothers know who have sons in those happy regions. Civilization is spending a great deal of energy on Africa, and one will be glad to find that Africa makes some return, if it be only to lower the price of pneumatic tires for bicycles.

STUDIES IN EIGHTEENTH CENTURY LITERATURE:

THE HISTORIAN GIBBON, IN HIS PERSONAL RELATIONS*

GIBBON is not only England's greatest historian, he is also, if we put poets aside, one of her half-dozen greatest men of letters. His unique position as a historian is amply proved by the fact that there is no other history, in a modern language, treating of a period not the author's own, which is anything like so widely and frequently read, a hundred years after publication, as is his. But he owes at least half his readers to other than historical merits. Mere admiration for the courage which conceived a vast undertaking, for the learning which justified it, or for the masterly and luminous handling which alone could give shape to material so immense, would not by itself have caused the "Decline and Fall" to survive its author longer than anything in English prose, of at all equal bulk and seriousness.

It is even posssible that nothing equally old [Gibbon's immortal History was first published in 1776–87] has so many readers to-day, if we except Bacon's "Essays," "The Pilgrim's Progress," "Robinson Crusoe," Goldsmith's "Vicar," and Boswell's "Johnson," and if this is so, it is to the man of letters and not to the historian that it is due. It is not so much by what it tells us as by his incomparable way of telling it that he attracts us. Like every great artist he has given us himself as well as his subject, and if we return again and again to the "Decline and Fall," it is less for the sake of Byzantine Emperors and Gothic invaders than for that of Gibbon himself. We feel the presence, behind every page, almost behind every sentence, of a great and original personality.

The publication of the original manuscripts of the famous "Memoirs" and of a large number of new "Letters" has now placed us for the first time in a position to know all that there is to be known about Gibbon. It cannot be said that it seriously affects our judgment of him. The new volumes are delightful reading, but we hardly know him any better when we have finished them than we did before we began: we have only seen more of him. But Edward Gibbon is one of those people of whom we cannot see too much, and we are heartily grateful to his editors, Lord Sheffield, Mr. Murray, and Mr. Prothero, for the new opportunities they have given us.

We now possess the complete picture of him which is, of course, to be looked for partly in the "Memoirs" and partly in the "Letters." It had long been known that the "Memoirs" as hitherto published were an arrangement put together by Lord Sheffield or his daughter from several sketches left by Gibbon. These have now been printed for the first time. But the bulk, and the best, of what Gibbon wrote, had already

*The Letters and Autobiographies of Edward Gibbon, author of "The Decline and Fall of the Roman Empire." (John Murray, London, 1897.) The present critique is abridged by the editor of SELF CULTURE from an article in the Fortnightly Review (March 1897).

appeared in his editor's brilliant compilation. The new matter affords a good many characteristic touches, hitherto suppressed by editorial prudence or prudery, and the whole opens out an interesting problem to the curious: but that interest centres round the personality of the editor rather than that of the author, and the large public who care more for Gibbon than for the Holroyds, decidedly prefer the short to the long, and dislike repetition, will prefer the single old autobiography to the seven new. To talk of that incomparable production would be, it may be hoped, to talk of what everyone knows more than very well — everyone at least who cares at all for literature — for the "Memoirs of my Life and Writings" are, and deserve to be, almost the Bible of all sorts and conditions of students.

The case is different, however, with the letters. Here the new matter is much more extensive than the old, and even the old was never well known as the "Memoirs" were. It is true that Lord Sheffield printed the best of the letters, and that the new ones do not materially alter our conception of Gibbon. But it is also true that Lord Sheffield subjected the letters which he published to a very rude and merciless pruning; that they are consequently full of irritating blanks and asterisks, and that they are awkwardly arranged, in two batches, as he published them. There can, therefore, be no doubt that if the public keeps to the old "Memoirs," it will prefer the new letters. In Mr. Prothero's two volumes we have most of the old letters, printed for the first time in full as Gibbon wrote them, and about four hundred new ones. They are of every kind, but the largest division of them are Gibbon's business letters to his father, his unbroken correspondence with his stepmother after she settled at Bath, the business portions of his letters to Lord Sheffield, hitherto omitted, and Lord Sheffield's replies. The whole forms a most interesting and delightful collection.

Gibbon's mind and the style which is the reflection of it are more at home in the atmosphere of a work which must and should be deliberate, formal and, in the best sense, artificial, than in the lighter, more familiar and occasional, epistolary world. Not that art has not a great deal to do with the making of a good letter, but it is an art whose principal characteristics are ease, grace, delicacy, variety, lightness of touch, and these are not the things we look for from Gibbon. But, if his style is not everything the critical heart might desire, its merits must not be forgotten. It is formal, and even pompous, no doubt. But there are two classes of pompous writers. The more common is that which prefers high-sounding phrases, because they are the best protection of those who have nothing to say. The other is that which, having something, and something of weight and importance to say, is determined to give it all the advantages of a stately and splendid presentation; and so runs the risk, in its dread of vulgarity, of being betrayed into the opposite extreme.

It was to the latter class that Gibbon belonged. He set a very high value upon style. Even when he receives Lord Sheffield's political publications, we find him more than once hinting his regret that his friend is "above the trifling decorations of style and order." And for himself we know that he would take several turns round his table before he could settle a period to his satisfaction. The stately structure of his sentences remains for ever in just and immortal association with the stateliness of his theme; and if the preference, which had become a habit, occasionally degenerated into an abuse, who that loves dignity in a slipshod age will care to condemn very severely a fault that came of loving it too well? Language that is over-formal is easily forgiven, so long as there is sense and meaning behind it; and few indeed are the authors who have surpassed Gibbon in his strict observance of the rule that every sentence ought to contribute something, great or small, to the argument or theme of its author. There is besides a special excuse for his elaborate formality as it appears in the letters. It was a habit, no doubt, which he could not easily have broken, but it is clear that he often used it deliberately and consciously for the sake of the humorous effect it produces.

Gibbon always looks on the bright side of things, regrets nothing that he has given up, wants nothing that he cannot have. He has a right to laugh at the hysterical lamentations of men of letters,

for his own attitude is always perfectly simple and perfectly dignified. He does not quarrel either with his publisher or with the public; he makes no complaint against Ministers who gave him neither pensions nor ribbons. We do not find him pointing indignant comparisons between the earnings of a man of genius and those of a great merchant, or even a Cabinet Minister; he is perfectly aware that merchants and statesmen live disagreeable lives, for which they have a right to be compensated, while the life he lived was its own best reward.

That life is not perhaps so colorless and uniform as those of most scholars, but it is still simple enough and broken into very simple divisions. The letters cover nearly the whole of it, beginning before he was twenty and extending to within a few days of his death. He was born on the 27th of April, 1737 (old style), and died on January 16, 1794. The period of childhood and education spent at his father's house at Beriton, in a school at Kingston, then at Westminster and Oxford, and finally at Lausanne, occupies the first twenty-one years of his life. He returned from Lausanne in the spring of 1758, and from that time till his father's death in 1770, he lived principally at Beriton, but some part of the year was generally spent in London, and he was abroad from 1763 to 1765.

The chief events of this period were the publication of his "Essai sur l'étude de la Littérature" in 1761, and the first conception of his great work. On his father's death, in 1770, he became an independent man, and from then till 1783 lived principally in London. During this period, in 1774, he entered Parliament for the nomination borough of Liskeard, and in 1779 he became a Lord of Trade; but the publication of the first volume of the "Decline and Fall" in 1776, and of the second and third volumes in 1781, are far more important events. Their success decided him to abandon politics for literature and England for Switzerland. He settled in Lausanne with his friend Deyverdun in September, 1783, and there he spent most of the remaining decade of his life. He came to England in August, 1787, to see the concluding volumes of his History through the press, and stayed a year; and he came again in the summer of 1793, and was in London when he died.

The style is the man, it has been said. Certainly it is so in Gibbon's case. The famous style, in all its essentials, makes its appearance in a letter written when he was only twenty-three and to his father. No doubt he was a born lover of form, some would say of formality. It is not easy to imagine him receiving his visitors in a dressing-gown; nor were the children of his brain ever allowed to go forth except in full dress. The very fact that he writes, instead of speaking, is characteristic of the man. Everything with him is weighed and premeditated, till it takes an almost judicial tone. And averse as he was to mere correspondence, he says of himself that he never avoided writing a letter of importance. Indeed, one is struck with the industry and energy which led him, in those boyish days at Lausanne, to despatch long letters on passages in books he was reading to famous scholars with whom he wished to establish an acquaintance. Youthful ambition no doubt often tries to make itself audible to those who are securely seated on the heights it desires to climb; but gods and great men live at ease and do not always heed their suppliants; and the proof of Gibbon's capacity is that he won both attention and respect.

For a temperament of Gibbon's sort, life contains no disappointments. Nothing is desired that is not obtainable; nothing attempted that is not accomplished. The triumphant execution of the gigantic scheme of his History was due as much to his cheerful temper as to his genius or industry. No doubt he was exceptionally lucky in the matter of freedom from cares and worries. But, as a great moralist said, "if you would have anything good, receive it from yourself." Some people upset themselves about every trifle that goes wrong. Gibbon owed most of his serenity to his own inherent good sense.

His has been called a Pagan, especially a Roman, character; and there is a good deal of rather obvious truth in the remark. There were probably few English country houses in which he felt as much at home as he would have felt at one of Cicero's or Seneca's villas. But, just as it would be an immense mistake to think of him as a mere epicure, because no house would have suited him that did not contain a dining-room and a

drawing-room, as well as a library and a study; it would be almost equally absurd to fancy he had no heart because he knew nothing of the peculiarly Christian sentiments like the "enthusiasm of humanity." His friends did not find it so. When the fox-hunting Godfrey Clarke lost his father, Gibbon was the only person he wished to see except his own family; and to his father, his stepmother, his aunt, and his few friends, he was all that a son, a nephew, or a friend can be. He sacrificed not merely his leisure and his tastes, but something of his prospects and fortune, to gratify a father who had not thought too much of his son's interests; for Mrs. Gibbon (his stepmother) he showed the practical and unselfish nature of his regard by a perfectly voluntary increase of her jointure, and by making it his first care in dealing with his property that every reasonable or unreasonable wish of hers should be carried out; and for "Aunt Kitty," whose life and ways and character lay so very far from his, he proved the genuineness of his affection by a hundred little acts of kindness, only one or two of which, indeed, have come down to us, but they are enough to assure us of the reality of the rest.

Gibbon had not, perhaps, much of what we call "soul," but only a man who had real depth of heart would have thought, as he did, of asking that "Aunt Kitty," when she went to Sheffield Place, might sleep in the room in which he usually slept. There is a touch of tenderness in that little act of thoughtfulness, and a touch of insight into an old maid's simple fancies, which, to tell the truth, one would have hardly have suspected in Gibbon. But even if it stood more absolutely alone in our knowledge of him that it does, it is impossible to believe that it stood alone in fact. His somewhat reserved and formal nature probably did not allow him to speak the language of the heart very easily; and his heart may, perhaps, have had much to say which it found no words to express. Still, at times he does give us glimpses of this side of his nature: whether they are more than glimpses we can hardly say.

No one will claim for Gibbon that he possessed an exceptionally affectionate nature, but the man who wrote such letters as he has left behind him was not a heartless man. And if overflowings of the heart are somewhat rare with him, there is this, at least, to be said in his excuse. Human sympathies need the natural human relationships for their development; and Gibbon hardly remembered his mother, lost his brothers and sisters in their infancy, and had no wife or child. During the twenty-three years between his father's death and his own, he lived chiefly alone; and solitude is certainly the school of selfishness.

He seems never, at least in mature life, to have seriously contemplated emerging from his solitude by the natural road of marriage. Nor, except for his shortlived parliamentary ambitions, does he ever seem to have thought of any career but that of a scholar, and, though Mrs. Gibbon, "with seeming wisdom," exhorted him to take chambers in the Temple and read for the Bar, he does not repent of having neglected her advice. "Few men," as he says, "without the spur of necessity, have resolution to force their way through the thorns and thickets of that gloomy labyrinth. Nature had not endowed me with the bold and ready eloquence which makes itself heard amid the tumult of the bar; and I should probably have been diverted from the labors of literature, without acquiring the fame or fortune of a successful pleader. I had no need to call to my aid the regular duties of a profession; every day, every hour was agreeably filled; nor have I known, like so many of my countrymen, the tediousness of an idle life."

The words take us back to what is after all the central thing about him, the rare definiteness with which he saw his goal, and the union of cheerfulness and determination, almost equally rare, with which he pursued it. He was one of those happiest of mortals who do not need the "preponderance from without," for whose guidance Wilhelm Meister longed; for him the preponderance within spoke clear enough. The call to be a scholar was with him from the first, the special call to history came later. Both were promptly, strenuously, unwearingly obeyed; and to that cheerful and long-sustained obedience the historian owed one of the happiest of lives, and we owe the greatest work of history in a modern language.

J. C. BAILEY.

PRINCE BISMARCK:

HIS FAMILY HISTORY, AND EARLY SCHOOL LIFE

THE entry upon the eighty-third year of his life of one of the giants of history makes fitting some account in these pages of the man and his career. Circumstances have favored the publishers of SELF CULTURE in obtaining from a notable and exceptionally well-informed source — that of Dr. Bruno Garlepp, — the materials of Prince Bismarck's life, * which have been translated for them by Mr. Sidney Whitman, author of two important historical works published in recent years in England and in this country — "The House of the Habsburgs," and "Imperial Germany." A selection is here made from the work in question, dealing with the German ex-Chancellor's family history and early school days. The article will, presumably, be of much interest to all who share with us admiration for one of the most remarkable men of the time, whose career, for so many years, has been bound up with the annals of the great German nation.

In writing of Prince Bismarck, one can hardly help regretting that so able and astute a man as he, has now, for seven years, been officially withheld from giving his vast experience as well as his able services to the nation. Its unity, we need hardly say, he not only created, but has efficiently preserved it, and at the same time raised Germany to high eminence among the Great Powers of Europe. To express regret at this apparent rupture between these two great personages is not, we hope, to arraign his youthful and impetuous master, for whom, on many grounds, we have a sincere liking, and whose personality is too strong and self-assertive to permit of its being over-shadowed, far less imperilled, by even an old, singularly-able and well-tried servant of the State. Nevertheless, we could wish it otherwise that one who has been such a pillar of German nationality, and, in his time, the great arbiter for beneficent ends in Europe, should, in his declining years, suffer official as well as political eclipse under the personal government of an impulsive, and even audacious, ruler, intoxicated with youthful energy and the lust of power.

But this is a matter which we must leave to history, since the causes of the seeming rupture between the stout-hearted, iron-willed, and un-idealistic ex-Chancellor and his imperial, militant master are not wholly on the surface, and may not readily be divined by one remote as the writer is from the scenes and contests that have occasioned the personal differences. There are those indeed high in official circles in the Empire who say that the rupture is by no means a real one, and that the Emperor is fortunate in still receiving, as he is in a position always to command, the loyal service and sage advice of his dutiful old councillor.

Into the story of the youth-time and the family history of Prince Bismarck no discord at least enters. What the youthful Otto von Bismarck was in his early life, and what were the qualities he inherited from his ancestry which made him the man he became, the reader of the following pages, if he has not already been apprised of the facts, will now know. The life, in all its features, is a singularly interesting, masterly and eventful one. May its setting be yet distant, and, when it comes, may it be peaceful and untroubled!—EDITOR SELF CULTURE.

Family History*

With the Thirteenth Century appear the earliest authentic records of the Bismarcks, then styled Bishofsmarck or Biscopesmarck, at which period the ancestor of the great Chancellor occupied the influential position of Master of the Company, or Guild, of "Merchant Taylors" at Stendal, in the old Mark of Brandenburg. The family thus belonged to the patrician order, or lesser nobility, in contradistinction to the higher nobility and the mere citizen class. They were, however, admitted to the higher order of landed nobility in 1345, for in that year Louis the Elder, Margrave of Brandenburg, requited the eminent services of the head

* "Germany's Iron Chancellor." The Werner Company, Publishers, London, Berlin, Akron, O., Chicago, and New York.

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of the family, Klaus von Bismarck, with the grant of the Castle of Burgstall. Later on, in 1592, the Elector John George, practically forced the Bismarcks to exchange the domain originally granted for the village and manor of Schoenhausen on the Elbe, in order that he might gratify his passion for hunting by enlarging his deer forest at Letzlingen.

The terrible times of the Thirty Years' War did not spare Schoenhausen, and the ancestral seat of the Bismarcks with its castellated main block was burnt to the ground. The anarchy which then prevailed in Germany is exemplified by the fact that some scions of the Bismarck family fought for the Swedes, and others for the Imperialists. A united German Fatherland was not even dreamt of in those days. The guiding principle of each fraction of the Holy Roman Empire appears to have been "Each man for himself and De'il take the hindermost." All Germans, no matter what their creed or political feelings, were united, however, in common action against the arch-enemy of German union, France, and thus we find the descendants of those Bismarcks, who previously were engaged in fratricidal warfare, fighting side by side on the banks of the Rhine against Louis XIV.

Bismarck once said: "Since the time of the Huguenots every one of my ancestors, as well as my father and his three brothers, has drawn a sword against France. My grandfather fought at Rossbach, and his father against Louis XIV., in the minor wars on the Rhine in 1672 and 1675; several of us fought for the Imperial cause in the Thirty Years' War, as well as others on the Swedish side. And lastly one of our race fought with the German mercenaries for the Huguenots."

Towards the end of the Seventeenth Century (1690), Augustus von Bismarck commenced the building of a new castle on the foundations of the former one, and completed the work in the year of grace 1700. This is the building which meets the eye of the pilgrim to Schoenhausen in the present day. It is pleasantly situated in close proximity to the village church of Schoenhausen on the summit of a hill, whence a far-reaching view is afforded over the land enclosed by the Havel and the Elbe, known by the name of the Katten-winkel (*anglice* Katte's Corner) after the family of Lieutenant Katte, the unfortunate comrade of Frederick the Great's youth. An allusion to this family is made by the two coats-of-arms cut in stone over the lintel of the door of the Schoenhausen mansion, the one on the right displaying the Bismarck double trefoil of oak and clover, that on the left showing the allegorical Katte arms, of a cat playing with a mouse. The inscription over the door mentions the name of the builder and his wife, Dorothea Sophia Katte, and the year of completion, 1700.

The Bismarcks had from time immemorial been a military family, and it was only natural that the son of Augustus von Bismarck, Augustus Frederick, should also embrace the military career. He served with the afterwards celebrated Anspach-Bayreuth Dragoons, having the rank of Major, and was stationed with them at Gollnow in Pomerania. He acquired by marriage and inheritance the estates of Kniephof, Kuelz and Jarchelin near Naugard. Major Augustus von Bismarck appears by all reports to have been a very merry gentleman, and to this day the inhabitants of Gollnow repeat stories of his prowess and reckless daring. He accompanied Frederick the Great in the capacity of colonel in the campaign of 1742, and was severely wounded at the battle of Czaslau. Some Austrian hussars surprised the transport wagons carrying the wounded to the rear, and, with a barbarity common to those times, killed their defenseless opponents, among them Colonel von Bismarck.

The son of the latter, Charles Alexander, the grandfather of Prince Bismarck, was present at the battle of Rossbach, whilst his son, Charles William Ferdinand (born 13th November, 1771), entered the Carabineers of the Royal Body Guard at the tender age of twelve and took the field against the same enemy, the French, as orderly officer to the Duke of Brunswick in 1792–93. It is a curious coincidence that Prince Bismarck and his two sons should also have taken an active part in a war against that nation, which, for two hundred years had demanded a like sacrifice from his ancestors.

Ferdinand von Bismarck retired from the Prussian service with the rank of captain and devoted his attention to his estate of Schoenhausen, where he lived with his child-wife Wilhelmina Louisa,

née Mencken, to whom he had been united on the 7th of July, 1806; she being at the time of her marriage only sixteen years of age.

Troubles were not long in overtaking the newly-married couple, nor did they come singly, for within three months of their marriage, Germany was invaded by the French, the Prussians were defeated at Saalfeld, and Prince Louis Ferdinand, whom they had often met in Berlin society, found a soldier's death on the field of glory. The beautiful Queen Louisa (afterwards called Prussia's Guardian Angel) hurried through the Old Mark before the battle of Jena and stayed a night at the castle of Tangermünde near Schoenhausen. She came with an overflowing heart, and in ignorance of the issue of the battle, to call upon the Brandenburgers to stand by the Crown and resist the enemy to the last. This call to arms was, however, hardly needed, for the Old Mark of Brandenburg was the backbone of the monarchy, and its inhabitants had at all times shown the greatest devotion to the Prussian dynasty. Prussian troops soon appeared in the greatest disorder, and established beyond doubt the melancholy fact that Prussia's power had been broken like a fragile reed by the Emperor Napoleon on the battlefield of Jena, on the 14th of October. Following in hot pursuit on the heels of the routed Prussians came the French under Marshal Soult, who established his headquarters at Tangermünde.

The French remained true to their principles of living on the resources of the conquered country, thereby preventing any attempt at resistance, and enforcing obedience to their demands. It was, therefore, only natural that the like fate should befall the quiet village of Schoenhausen. The French looted what they thought worth taking and destroyed the rest, ill-treating every inhabitant they could lay hands on. The majority of the latter had, however, fled to the woods, full of terror of the invaders. Von Bismarck and his wife endeavored to escape in their carriage but were overtaken by the French cavalry, who showed an evident intention of letting their wrath fall heavily on their prisoners. Eventually Herr von Bismarck succeeded in preventing brutal outrage and in saving his horses, but he was forced to return to Schoenhausen with this rough horde of robbers. The French at once ransacked every room in the castle in search of plunder, but, not finding enough to satisfy their greedy desires, they turned with evil intent upon the beautiful Chatelaine, who fled terror-stricken to the library and succeeded in bolting the massive door, which to this day bears the marks of French bayonets and of their brutal methods of treating their defenseless prisoners.

Husband and wife managed eventually to escape to the shelter of the neighboring wood where they passed a bitterly cold night, oppressed with anxiety lest their home should again fall victim to the flames. The next morning the villagers and the Bismarcks returned to Schoenhausen scarcely daring to look at the home. The sight of the wanton, universal destruction moved many a strong man to tears. Nothing had been too trivial to attract the attention of French vandalism; even the great, painted family tree of the Bismarcks had been wantonly thrust through and through with their bayonets.

An entry in the diary of the Schoenhausen pastor runs as follows: "No enemy had set foot in this quiet corner between the Elbe and the Havel since the Thirty Years' War. Almighty God, grant that we may retain our homes, our barns and cattle, else our misery will be without end. O golden peace, O happy quiet which we have enjoyed so long, when will ye return?" In another hand these burning words are added—"when Prussian warriors fighting with God's assistance for their Fatherland have entered Paris!"

To return, however, to the events of the disastrous French occupation, Ferdinand von Bismarck had taken the precaution to hide his valuables in a place of safety. Amongst other things he had buried a considerable number of gold coins under the threshold of the orange-house in his garden. On his return to Schoenhausen after that night spent in the open, he hurried thither to assure himself of the safety of his treasure and was alarmed to see from afar that the earth had been turned up and that a few coins were lying about here and there. His fear was, however, turned to joy on finding after a closer inspection that the earth had only been scratched by a dog and not by the French, and that his money was still safe.

Herr von Bismarck had, however, enough of such scenes, and in order to avoid them in future, both at the castle and in the village, he applied to the French commander at Tangermünde for a guard which was at once granted him. Nevertheless he sent his wife for greater security to Rathenow, where he himself had been in garrison with his regiment years before.

When all danger was over Frau von Bismarck returned to Schoenhausen, to which she had become attached, although the castle lay far from the aristocratic and intellectual circles of Berlin, in which, thanks to her father's position, she had moved before her marriage. In spite of the rather melancholy aspect of the square-built castle, comfort and refinement were not wanting in the severe simplicity of its numerous and spacious rooms. This building consisted of three stories, connected by a broad flight of oak stairs, the first story containing the dwelling-rooms, which, though not very lofty, are decorated with much taste. On looking out into the courtyard a wing is noticed on the right, a sandstone vase in the centre, and on the left a lofty lime-tree which separates the courtyard from the farmyard. On descending to the ground floor a pleasant room is entered, which offers a pleasant view over the flower garden and the park. A terrace leads from this room to the carefully tended flower beds and lawns and thence to the park, intersected here and there by gravel paths. An orange-house used to stand on one side, but though it was famous far and wide for its flourishing trees, yet it proved very expensive to maintain, and von Bismarck was only too pleased to present the trees to a Potsdam relation, General von Bismarck. Still further in the park lay an artificial island with a pavilion, whilst shady nooks here and there invited the passer-by to rest his weary limbs.

The ancestral estate thus offered much agreeable variety, independently of the treasures of the library, and was highly valued by Frau von Bismarck, whose ties to the neighborhood were soon to be increased by a deep and hallowed reminiscence. Her first born son died in his early infancy in 1809, and was buried in the park where an iron cross, surrounded by dense thickets and decorated with wreaths, still marks his last resting-place. Their second child, a daughter, born in 1808, also died young, but the third, Bernhard, born on the 24th July, 1810, survived, and in later life became a privy councillor, a royal chamberlain, and district magistrate of Naugard. He inherited as his share of the family property the estates of Kuelz and Jarchelin in Pomerania. After the deep humiliation of Prussia, which cost the beloved Queen Louisa her life, avenged by the glorious deeds of the War of Liberation, another son, Otto Edward Leopold, was born to the Bismarcks, on the 1st of April, 1815, a few months before the crowning victory of Waterloo.

The career of many a great man has owed much to the influence of those among whom his earliest days were spent; and whose influence can be greater than a mother's?

In few cases, perhaps, has a mother's influence on her son's character been greater or more beneficial than that of Frau von Bismarck over her great son, who, on many occasions, has borne eloquent testimony to her loving care and training for the battle of life. But then, Bismarck's mother was an exceptional woman in many ways. She had inherited high intellectual powers and culture from her father, Privy Councillor Mencken, whose character was thus summed up by the great Prussian minister von Stein: "He is a refined, liberal-minded man, endowed with the noblest ideas and aims." Little wonder then that Otto's mind from his earliest infancy was impregnated with her noble ideas, cultured feelings, her love of truth, single-mindedness, and honesty of purpose. The lessons of heart and mind which he learnt at her knee contributed in no slight degree to his success in after-life.

From his soldier-father, on the other hand, Bismarck inherited the hardihood of mind and body, the courage and high spirits, and the sense of discipline which have been characteristic of the Prussian "Junker" or squire, since the days of Frederick the Great. The characteristic qualities which Otto von Bismarck had thus inherited from his parents were still further developed by the surroundings of his early boyhood at Schoenhausen and at Kniephof no less than by the history of his ancestors' devotion to the Crown and State, and by the humiliating story of Prussia's weakness in the day of

need, which his mother never wearied of repeating to him.

At the time of Otto's birth the circumstances of the Bismarck family were by no means so flourishing as they had been formerly. The wave of general depression which now exerted a potent influence over the whole of Prussia necessitated the sale of the other larger chateau which lay close to the village of Schoenhausen. A large number of the landed proprietors had suffered such losses during the disastrous war of 1806–7 that they were unable to pay their mortgages when due without utterly ruining themselves. The king of Prussia, therefore, granted at Memel a so-called "moratorium," i. e., the extension of the time for such payments until the 24th of June, 1810, and decreed further that all public paper money was to be accepted at the face value in payment of caution-money, and that the statutory provisions as regards legal executions for debt were to be greatly restricted. Treasury bills were to be legal tender in payment for all debts.

This measure, however, fell far short of the desired result in the greater part of Prussia, which was still occupied by the French, and in fact contributed materially to increase the misfortunes of the landed proprietors, the Bismarcks included. The absence of sufficient coined money was an obstacle to all business, and depreciated the value of real estate and country produce to a disastrous degree. In addition to these evils came the decree abolishing serfdom. Though this measure was to be introduced gradually by the institution of the *corvée*, or forced labor from the enfranchised peasants, it added materially to the already overwhelming difficulties of the landed gentry. In several neighborhoods the peasants gained an entirely incorrect idea concerning the provisions of this statute and were firmly convinced that on St. Martin's Day, 1810, they would be free from all their former feudal obligations. Agitators and evil-minded busy-bodies confirmed them in their erroneous ideas, assuring them of the royal support of their aims, and a large number of peasants accordingly gave notice of their intention to quit the service of their masters.

Several of the gentry were so incensed at this behavior that they attempted to coerce their tenants by force, and even went so far as to fire on the riotous peasantry, who then proceeded to storm and pillage the castles and ill-treat the owners. They were, however, speedily undeceived by the arrival of soldiers to quell the disturbances and were not a little surprised to hear that the king was much displeased at the manner in which they had violated the provisions of his generous decree. A special commission was appointed for each province to determine and regulate the relations of the peasants to the landowners.

The nobility thought that their privileges were violated, and the existence of their estates imperilled, by the new system of universal taxation. On being assured that the king had not the least intention of deviating from the path marked out until he had reached the appointed goal, a section of the nobility petitioned his majesty with scant reverence. The latter was so incensed at this wanton interference in affairs of State that he ordered the chief offenders to be tried, with the result that two were sentenced to imprisonment in a fortress, whilst two councillors were suspended from their duties, and a third dismissed from his office.

Though it was no doubt absolutely necessary to abolish the outrageous injustice of considering the peasants as the personal property of the landowners, as well as certain other impracticable privileges, the successors of those who had inherited these "rights" felt each successive reform to be another blow to their interests. On the whole, the Bismarck family appeared to have been better off than many others in those disastrous times. Ferdinand von Bismarck inherited the estates of Kuelz, Kniephof and Jarchelin from his cousin one year after Otto's birth, and moved accordingly to Kniephof, which lies east of the town of Naugard.

The manor house, built by Major Augustus Frederick von Bismarck, was only a modest building like many others in Pomerania, and the Old Mark. The affairs of these estates made the presence of the owner an absolute necessity, and besides, Herr von Bismarck wished to gratify his passion for hunting. He was, however, disappointed in this, for the old oak and beech forest, which then existed near Kuelz, had been overrun by the French, who considered the whole land

as their property. A little stream, the Zampel, meanders through the rich meadows of Jarchelin, bordered on each bank by alders. A garden, celebrated for its beauty, and a couple of carp ponds completed the country charms of the new home where Otto lived without interruption till his sixth year.

His mother, Frau Wilhelmina Louisa von Bismarck was the guiding spirit of the boy's home life and education. She was gifted with tact, beauty, rare intelligence and culture, and a desire for that higher life which she rightly held to be the aim of every true Christian. Though many deemed her cold and distant, she devoted her whole heart and energy to the education and moral welfare of her family, her younger son in particular. The latter at all times spoke of his mother with touching affection, and bitterly regretted that her one desire, to witness her son's success, was not vouchsafed to her. His father was a tall, well-grown man, full of humor and good nature, but without much education or refinement. In those days the noblemen, who entered the army at the age of twelve, generally considered that further study was superfluous. Moreover, the rough life of a soldier was not calculated to stimulate to further intellectual development. His mother, on the other hand, owed her position in society to the great interest and to the active part she took in these matters, and claimed with justice that her family had long been active in propagating the new "ideas."

"The blood of Leipsic professors flows in my veins" said her great son in later years, alluding to his maternal grandfather, Anastasius Louis Mencken, a professor of the Leipsic University, who, after the death of Frederick the Great, had moved to Berlin, where he found employment as privy councillor until his death, in 1801. Frederick William III., with whom he had often come into contact, valued highly the services of such an intelligent and circumspect adviser, and did not blame him for holding advanced ideas about reforms and innovations; indeed, he himself was from time to time gradually convinced of their necessity.

Frau von Bismarck had inherited many of her father's ideas and sentiments, and by virtue of them took the lead in society and at home, though with regard to the latter it must be confessed that her innovations were not invariably crowned with success, and that the expensive alterations undertaken at her instigation did not contribute to better the indifferent circumstances of the family.

Her mother's eye was, however, more fortunate in gauging the capabilities of her two sons. The elder, Bernhard, she considered would be well fitted for the life of a magistrate in the provincial courts, whilst she predicted a diplomatic career for Otto. Although the latter would have preferred to become a soldier, and in spite of the conflict which he felt must result between his innate honesty and love of truth and the wiles of diplomacy, he justified his mother's estimate in the most ample manner without departing in the least from his self-imposed principle of speaking the truth. Since Otto von Bismarck first entered the ranks of diplomacy, the old-fashioned style of French intrigue and the principle of justifying the means by the end, have given way to a more honest and upright practice, and the Prince was justified in making the proud boast in his old age, "I have never told a lie, not even in my diplomatic career."

A few anecdotes of the Prince's boyhood have been handed down by reliable and trustworthy persons belonging either to or well acquainted with the family, which show that Otto, like not a few other great men, was not in any way distinguished from the playmates of his youth.

In his earliest childhood he was unable to pronounce certain letters of the alphabet such as *l* and *r*, and it was amusing to hear the little fellow declaim a piece of poetry after the manner of German children thus:

> Honnoa ye bees, gnowls the bear,
> Give me of your honey nare.

His mother invariably insisted on extreme punctilio and good behavior, whilst his more easy-going father often attempted to weaken her authority. The following story shows the boy's innate love of truth even in the most trivial matters. One night just as he was going to bed his mother asked him whether he had had his supper. As he had been wool-gathering and could not remember it at the time he ran at once into the kitchen and asked the old cook, Louisa

Schmeling, whether he had done so or not, and ran back to his mother joyfully exclaiming "Yes, mother."

Another time his anxious mother asked him: "Otto what have you been eating? You smell of medicine." He thought for a while and then said quietly, "There was a bottle on the window in father's study. I put it to my mouth but did not drink any because it smelt so nasty."

Even at such a tender age Otto did not feel inclined to let himself be passed over. His parents once gave a ball, "or something of that kind," and as the party sat down for supper he looked for a seat and found one in a corner, where were seated some gentlemen who were much astonished at the youthful guest as they supposed the child to be. One gentleman asked the others in French who the little one might be. "*C'est peut-être un fils ou une fi*—" when Otto broke in with "*C'est un fils, monsieur*," which astonished them not a little.

His first friendship was with "Lotte" Schmeling, the faithful friend and servant of the family, who baked yellow cheese-cakes for his especial delectation, and who rivalled his mother in looking after his wants. Fortunately the boy's character did not suffer from these determined efforts to spoil him. He remained modest, well-behaved and pleasant towards all; the tenderness of his boyhood's playmates left only grateful memories behind. Another of his early friends was the cow-herd Brand, of whom Bismarck said, during the campaign of 1870, "that the memory of those days was like heather and wild flowers." Another youthful trait which has characterized him throughout life was his devotion to dumb animals, and he was always amply repaid by their appreciation of his kindness. The horses sent to fetch him from the last posting station neighed at his approach when he returned home for the holidays. A like fascination was exerted by the natural beauties of the garden, woods and meadows of Kniephof, and the hours and days spent among these surroundings threw a glamour of poetry over all his life.

School Life

Bismarck commenced his school career at a very early age, for he was only six years old on leaving his father's house in 1821 for the Plamann School in the Wilhelm Strasse in Berlin. This institute then enjoyed a well-earned reputation first, because the pupils were well grounded in the various branches of education; secondly, because they became well "hardened" physically, and lastly, since sound German principles were instilled into their minds. This system of education had an excellent effect on the boy Otto's character. The knowledge which he gained during the six years he remained was of the utmost value to him at his next school, where this systematic training of his character and energies, and the cultivation of German principles, proved to have borne good fruit. The difference, however, between this training and his home life, as well as the ultra-Teutonism of many an over-zealous master, appeared at first strange and uncongenial in the extreme. He retained many unpleasant reminiscences of his masters, who were accustomed to treat each boy alike without regard to the peculiarities of his character or the bent of his inclination, and forced all by sheer severity to endure the pangs of hunger and cold to "harden" them. Nor did hatred of everything French, which was taught here, please him, for though he had been familiar with French misrule in Germany, yet there was much he had been accustomed to admire in their national life and institutions.

An unconquerable home-sickness overcame him when his thoughts flew back to his beloved home at Kniephof. His earliest youth had been spent in communion with nature in the green fields and leafy woods, whilst here he was confined to rows of houses which even the solitary lime-tree in the centre of the playground could not render acceptable or pleasant to him. The mere sight of a man ploughing or sowing in the spring often sufficed to bring tears of longing to his eyes during his walks beyond the town gates. Thus not only his body, but also his spirit, suffered somewhat, under the severe regimen of the Plamann School, and even the presence of his brother, Bernhard, who had already been there a year, could not console him for the absence of much that he held most dear.

The food at this school was unappetizing in the extreme; the meat, as Bismarck himself relates, was so tough that

it was impossible to chew it. Though, boylike, he had often eaten and enjoyed raw turnips, he could not stomach them when cooked with hard cubes of potato. A "square meal" was only possible when he was invited out to sup with the family of some comrade or another. The school appeared to be more of a convict prison than a school for a boy who had been so carefully and lovingly brought up as Otto had been. Ernest Krigar, a contemporary of Bismarck's at this school, thus describes the daily routine: "We were roused at six o'clock punctually by the ringing of a small bell. Breakfast consisted of a cup of milk and a slice of bread. Work commenced at seven, after a prayer followed by a hymn and a short address by Director Plamann. At 10 o'clock we had a recess of half an hour to enjoy our second breakfast of some bread and salt, supplemented in summer with a little fruit. At noon the bell called us to dinner in the long hall where the Director's wife and niece served each master and pupil with food. The latter was very plain, but, on the whole, nourishing and well cooked. Those who wished for a second helping had to take their plates to Frau Plamann and ask for it, whilst those who could not or would not finish what they had on their plates had to stand on the garden terrace until every morsel had been eaten up. Every day some three or four pupils offered us this amusement. Lessons commenced again at two and lasted till four, when we again received a slice of bread and salt; at seven the instruction for the day was over, and the leisure hours were occupied either by preparing for the next day's work or by out-of-door games. Supper consisted of mulled beer and sandwiches. We should have found the hours of study very long and tedious had they not been shortened by the two hours of gymnastics, which refreshed us amazingly."

Fortunately, Otto von Bismarck had very little false sentiment in his composition, but endeavored to meet obstacles and difficulties by the exercise of his independent spirit and self-assertion, to excite which was indeed the whole aim of the educational system then in vogue. The outward signs of Bismarck's character were however misunderstood by his comrades and his master, who thought him proud and supercilious, and thus put him in a false position from the first. His comrades in particular wished him to adopt the humble attitude of the new boy, and in order to achieve their object entered into a formal conspiracy against him. It is interesting to hear how Bismarck met their plot, which was to take effect at the bathing pond near Schoenberg, whither the masters used to take their pupils daily in summer in all weathers.

"It was above all things essential to show courage at this bathing-place, and those who showed signs of hesitation or who did not voluntarily take a header into the water had to suffer severely for it. The master would then take the coward on his shoulder and throw him headlong, of course, into the deepest part of the pond. We were then permitted to be of assistance in ducking him again and again when he reappeared at the surface until he had conquered his fear and dread of the water. Otto's enemies were already rejoicing in the anticipation of ducking him in the Schafgraben and were fully determined to show him their displeasure. Everyone was in readiness on the bank of the pond when Bismarck with the greatest *sang froid* stepped up to the brink, dived in, and reappeared at the other side. A general exclamation of surprise burst from us and no one ventured to lay a hand on him."

Bismarck's comrades were not long in realizing that their first opinion of his character and manner was wrong, and in a very short time Otto became one of the leading spirits of the school in spite of his youth. One of Bismarck's schoolfellows had received a German version of Homer's "Iliad" as a Christmas present. The thrilling story of this heroic struggle created the greatest interest among the boys, and since it was impossible for all to read the same copy it was agreed that Bismarck should read the book aloud for the benefit of his comrades. The lime-tree in the centre of the playground offered a convenient pulpit for the young orator, and as soon as school was over the joyful shout was raised, "To the lime-tree!" where Otto found as attentive an audience as he afterwards did in the Reichstag. Each boy received the name of one or other of the mythological heroes, but by common assent Otto was held to be entitled to that of Ajax, the mighty son of Telamon.

In winter the boys amused themselves with the mimic warfare of snowballing, and here again Otto was to be found at the head of his comrades. Two parties were generally formed, one defended and the other attacked the terrace which led to the garden. Needless to say, Bismarck was always in the forefront of the battle, directing the attack.

The life at this school, though undoubtedly rough, affected his spirit but little. The holidays at home or the days passed with his parents, who spent a few weeks in the winter months at the capital, only incited him to tackle his work with redoubled energy on his return to school.

A daughter, Malwine, was born to the Bismarcks on the 29th June, 1827, a few months before Otto left the school to enter the lower third class of the Friedrich-Wilhelms Gymnasium (or high school) in Berlin, which his brother Bernhard had entered four years before.

Otto had been thoroughly grounded in the various subjects taught, more especially so in history and geography, for which he displayed a natural ability. Dr. Augustus Schmidt gives in his history of the Friedrich-Wilhelms Gymnasium an interesting description of Bismarck's progress at that school. The first entry is dated "21st September, '27, von Bismarck, Edward Otto Leopold, aged twelve years, born at Schoenhausen near Rathenow, Protestant, son of a retired cavalry captain, admitted to the lower third class."

A very different tone prevailed in his new school from that to which he had been accustomed at the Plamann Institute. The whole atmosphere of the school was more liberal, and it can easily be imagined that the day of his entry at the beginning of a new term was one full of anticipations of a happier time. Even on this first day the bright intelligent face of the boy had attracted the attention of one of the senior masters, Dr. Bonnell, who afterwards was on terms of the closest intimacy with Otto.

Bismarck's first report at Christmas, 1827, proved the accuracy of Dr. Bonnell's estimate of his character and ability, for he obtained the fourth place in his class, with the general report of "excellent." He received the following marks in the various branches of instruction: "General behavior: no fault to be found, modest and well-mannered. Attentiveness: excellent, in Cæsar, Ovid, Latin, Greek, History, Grammar, Religious instruction, German, French, and Mathematics. Progress: well-sustained and marked in all branches."

Otto kept his place as fourth at Easter, 1828, and obtained his promotion to the Upper Third, where his reports varied between "excellent" and "good." Bernhard left the gymnasium at Michaelmas, 1829, to study law in Berlin, after remaining eighteen months in the First Class. Dr. Bonnell was transferred about that time to the Grey Friar's Gymnasium, and was followed next Easter by Otto, who felt more attracted to Dr. Bonnell than to his other masters. Up to that time the two brothers had lived together in their father's residence in the Behren Strasse, but since Bernhard was now serving in the Guards, Otto entered the house of Professor Prevost as a boarder. A year later, after being confirmed at the Church of the Holy Trinity by the Rev. Dr. Schleiermacher, the celebrated divine, he moved to Dr. Bonnell's house. The latter, who was afterwards appointed Professor and Director of the Friedrich-Wilhelms Gymnasium, gives the following description of the boy's life in his house: "Otto felt quite at ease in my humble home, and his behavior was always modest and unpretentious in the extreme. He seldom went out in the evening, but when I was not at home used to spend the time in conversing with my wife and gave evidence of his strong domestic tastes."

Bismarck was much attached to his old master, and in later years took great pleasure in visiting his house and looking at the tiny attic where he had spent so many happy days. Moreover, he sent his two sons, William and Herbert, to the Friedrich-Wilhelms Gymnasium, which was then under Bonnell's direction.

The solemnity of his confirmation left a deep and ineffaceable impression on the boy's mind, and the text of the preacher may be said to have formed his motto through life, "Whatsoever ye do, do it heartily, as to the Lord and not unto men."

Many tales are related of his innate sense of humor, which seems to have invariably broken out on his return to his father's estate for the holidays. Otto

was one day returning from a shooting expedition through the park, and had to pass the statue of Hercules, which stands near the wooden bridge spanning the little stream that forms the boundary of the park. Perhaps his bag was empty, or it may have been only an irresistible influence, but the fact remains that young Bismarck fired at the defenseless, old mythological gentleman, and plastered him well with small shot from behind. His father happening to notice the marks on the statue, and, being much annoyed, asked his son, "Otto, did you fire at the Hercules?" With a twinkle in his eye, the boy replied, "Yes, father, but I really did not think that I should have hurt him much, for he clapped his hands at once on the place where I hit him." His father laughed, and there the incident ended, but to this day the statue bears the marks of Bismarck's waggishness.

Otto remained two years at the Grey Friar's Gymnasium, and passed his final (Abiturienten) examination on the 3d of April, 1832, with the certificate of "good!" He was praised for his proficiency in French and English, which latter language he employed in writing his theme, for it appears that the French master had in some way offended Bismarck's loyal German spirit. His school career thus closed within a few days of his seventeenth birthday, and though it had been entirely successful, none of his masters would have ventured to predict that he would one day take the lion's share in welding the distracted German States into a homogeneous German Empire.

(Tr.) SIDNEY WHITMAN.

THE HOME AS AFFECTED BY MODERN LIFE:

A SOCIAL STUDY

DURING the early years of the present century, a young man, with his younger wife, resolved to make a home on some of the wild land in western New York. They had but little money, yet they possessed certain characteristics, such as patience, industry, economy, hopefulness and mutual trust, which enabled them to keep up courage under adverse circumstances.

In the course of years, many sons and daughters were born to them, or in this instance I should say daughters and sons, for their five eldest children were girls. There are people who might have questioned the Providence manifested in this series of feminine blessings, but these parents had a philosophy, here as elsewhere, that helped them to pluck the sting from the nettle of circumstance.

The eldest daughter became her father's assistant on the farm. She was obviously doing a man's work; but if any public solicitude was felt or expressed on that account, the records have not come down to us.

The second daughter became her mother's assistant. Under experienced guidance, she became an expert in not only the daily duties of the household, but also in many kinds of labor unknown to the modern housekeeper. She learned to bake and to brew; she searched the forests for the roots and herbs that, under her treatment, entered into the family pharmacopœia; she learned to prepare the beef, pork and mutton for winter consumption; to pickle and preserve the fruits that grew on the farm; to make sugar from the sweet juices of the home maples; and to make cheese, butter, soap, candles, and many other commodities that were necessaries in the home.

The third daughter, with whom in later years I became somewhat intimately acquainted, had a different class of duties; she was taught to card, spin and weave the wool and flax that were also home productions. From an experienced tailor she learned to make the clothing worn by her father and brothers. She took pardonable pride in the fact, when she saw them arrayed in their Sunday suits, that in its transition from the back of a sheep to that of American citizens, the material had passed through no hands but her own. She learned to cut and make dresses, to braid hats and bonnets, to bleach and repair them, and to make gloves and mittens. She taught her younger sisters to spin, weave, braid and sew and her young brothers to braid straw and whip-lashes. The family knit-

ting was done during the long winter evenings while the mother read aloud.

It will be admitted that these young women were both producers and manufacturers. The family formed a community that, with the exception of books, tea and coffee, pins and needles, and possibly shoes, was practically independent of the outer world. If they had little money they had but little need for it. They grew to womanhood under their father's roof, and from that home went as wives to their own.

That hard-working father was able to keep his daughters at home until they married, not because he earned higher wages than he could get to-day, considering the purchasing power of money, but because there was under the shelter of the home abundant labor for all, equally honorable and equally necessary.

I shall not claim that marriage was at this time the wholly ideal and beautiful co-partnership that it may become, but its conditions were certainly less complex and possibly less hazardous than they are to-day. A young man in inviting one of those young women to become his wife was establishing a limited manufacturing company, and with a prospect of success in direct proportion to his own efficiency and the wisdom of his selection.

If that father had felt the need of supplying by his own labor the necessaries and luxuries of life for his five daughters, we should sympathize with his very reasonable interest in the appearance of the future husband; but their labor was as important in the family scheme as was his own. Enduring with him the common privations, they enjoyed with him the common independence. Had they preferred to remain single, their labor, being productive, would still have made them useful members of society.

The order under which such a life is practicable has passed away. We may regret but we cannot recall it. The introduction of machinery has displaced the home industries of women even more effectually than those of men. Indeed a large share of the work then done by women is now done by men.

It requires but little reflection to see that the young couple who are starting in life to-day, and who may choose the farm as the basis of their hopes, must read the logic of events to a different conclusion. If we look in upon them at a period corresponding to the one we have been considering, we shall see a picture quite different from the earlier one. The eldest daughter may indeed be her father's out-of-door assistant, but in this instance the tailor-made gown is not of home production; in truth, her serviceable and neat fitting gloves bear a Parisian trade-mark. She is seated on one of those complex triumphs of human genius known as a reaper. A large adjustable umbrella protects her complexion from the rays of the morning sun. It is not an unpleasing vision. We know that she may drive for her father for a few hours, and that later in the day we may find her attending a Browning Club or listening to a University Extension lecture. And where are the sisters? Not making cheese, soap or candles; not spinning or weaving: those industries and many others have been taken away from them. And yet, as they have even more complex necessities than had their grandmothers, we may be sure that they are not idle.

The introduction of machinery has revolutionized modern life. It has increased wealth and leisure; it has also, alas! increased poverty and crime. It has taken bread from the laborer to give additional luxury to the capitalist. It has opened the eyes of men to new possibilities of the glory and grandeur of life, while at the same moment it has wrung a wail of despair from the wretch who is dying from starvation. But whatever may be its prizes or penalties, machinery is here — an actual force in our lives, — and the lesson of our time is to adjust our energies to the new order with as much patience and charity as we can command.

Every transitional period has its peculiar trials and dangers; but we shall not lessen them by mistaking the direction of the current. For the ideal marriage, for the man or woman perfectly adjusted to environment, we must look forward, and not backward.

In the larger measure of liberty given to women in these latter days, in the results of her more liberal education and greater diversity of employment, there has been some sensible disturbance of the old conditions of marriage. There is a certain restlessness which, if we consider carefully, will be found to be less unpromising than it at first appears. Again we must look, not to the past, but to the

future. If we spend our days in vain longings for the "good old times" we shall be but blind leaders of the blind, and shall fall into the pit of confusion.

Let us accept as our ideal of marriage, the welfare, not merely of the man, nor of the woman, but of the family. We desire to realize at some time in the future the union of the woman with the man in such freedom as shall permit the development of the two "distinct in individualities," and such as shall secure to the family the best influences of both. Once more, I say, we must look to the future. We have not suddenly fallen upon evil days and so lost a blissful condition, once ours.

In ruder ages man strode forth to slay. In self-defense he slew his enemy; for food he slew the wild beast. His instinct of self-preservation demanded of him great expenditure of brute force, and in the uncertain and irregular hours passed in cave or wigwam he was entitled to rest. The savage woman gave to the fields whatever tillage they received; she dressed the meat her lord had secured in the chase, and did by far the larger part of the drudgery their wandering life entailed. It is so among savage tribes of Indians to-day. The women are veritable beasts of burden; they are given — or taken — in marriage, and it would be hard indeed to find grounds for belief in their "elegant leisure," or in their ennobling influence.

Following the savage, came the pastoral period. Man had now become sufficiently civilized to build permanent homes, and with the aid of a standing army to protect him, he tilled the fields and engaged in various other industries. Woman's work became now sheltered work. Except in those countries where the size of the standing army was so great that her labor was still necessary in the field, she remained at home — a vast improvement, certainly. Still women worked and still were they "given in marriage." Except in very infrequent instances a woman did not receive or control her own earnings, and so was not free either to marry or to refuse marriage under the guidance of her affections.

Indeed, history furnishes us with no pictures of women who are so free. We read of the princess being brought a shuddering victim to the man whose face she had never seen. If her marriage with him proved a happy one that result was quite incidental to the main purpose of the union. The woman who inherits wealth is so hedged about that she has little opportunity to meet men who may seek her in marriage for purely personal considerations. We admit this to be true of women in other lands, and even in our own country, less hampered by traditions, marriage is not yet, for the average woman, the matter of deliberate choice that it should be. There are many social considerations which may be regarded as lions guarding the way. While it is true that many young women are now bravely testing the length of the monsters' chains by taking an independent course, it is also true that as a young girl comes to womanhood many subtle devices conspire to turn her thoughts in the direction of "a good marriage." The small craft of her womanly ambitions is skilfully guided into the harbor of "eligible opportunities." She is admonished to the effect that "golden days are passing." She meets a man who may desire to marry her. She reflects, "I am not particularly drawn to that man; I do not love neither do I hate him. Possibly I may not meet one toward whom I shall feel more warmly. True, I have had dreams — but I must marry; no other course is open to me." I think it will be admitted that I state the case mildly when I say that not only are many marriages made under these conditions, but that more occur under influences even more directly commercial.

A third period, which for our purposes we may call the period of machinery, has succeeded the pastoral age. Its results have been already stated. It has taken the greater part of the manual industries out of the home and given them to the supervision of man. It has given to one class of women leisure, but not independence; from another class it has taken the sheltered employment and sent its members out to labor among men. That this is wholly a misfortune I cannot admit. No one trained to a wise love of uses has a right to speak of labor as degrading. As to competition, it seems quite time that men who object strongly to this feature of the problem should search their motives and make quite sure that they are worthy and unselfish ones. To-day, as of old, the peasant woman of Continental Europe may be seen plowing in

the field harnessed with a dog, while her husband or son is loafing in the army. She is brutalized and degraded almost beyond the semblance of womanhood; but we hear no protest. Is it because she receives no wages?

With woman's more liberal education, the opening of various avenues of paid labor and of the professions offers to her not only wider fields of usefulness and enjoyment, but for the first time in the history of mankind it offers her financial independence and the possibility of a marriage under the guidance of the affections.

As all transitional periods have their dangers, probably the one we are considering is not wholly without them. In this newly-found freedom of financial independence there may be women as there have been and are men who may unwisely refuse the inevitable sacrifices that marriage and the establishing of a home entails. I cannot think that this manifest perversion of the womanly nature can prevail to any serious extent. Woman's inherent femininity will generally care for itself. She desires her home, her husband and her children as strongly as the best of men can desire them for himself or for her, and the fact that she is not willing to sell her birthright for a mess of pottage should fill the hearts of all true men with thankfulness and hope.

Let us have faith and patience, and we shall see that the disturbance of the old conditions of marriage are the heralds of a new and better order of things. If women are less amenable to authority than of old, it may be because new impulses are arousing them to a sense of higher responsibilities. If a few may prefer to live alone and earn their own bread rather than make a loveless marriage, the least that men can do is to allow them to do so on fair and equitable terms. They can do more: they can believe that it is because women are loyal to higher ideals that they may prefer to work and wait.

ADÈLE M. GARRIGUES.

HOW JOHN BROWN PLANNED HIS INSURRECTION

IT was John Brown's purpose to establish in the mountains of Virginia, an impregnable underground railroad station. He intended to keep up an open line of communication with the slaves, and aid them in escaping to the North. He evidently knew of a system of secret communication extending throughout all the larger plantations in the South. The same system of secrecy among black men was afterward noticed during the war. They frequently aided the commanders of the Northern armies in ways mysterious and unaccountable.

To a friend in Kansas, John Brown had declared that if Nat Turner, with fifty men, could hold Virginia for five weeks, the same number of men well organized and armed could shake slavery out of the State. "Give a slave a pike and you make him a man," said Brown. "Deprive him of the means of existence and you keep him down. The land belongs to the bondman. He has enriched it and has been robbed of its fruit. I would not give Sharp's rifles to more than ten black men in a hundred, and then only when they have learned to use them. It is not every man who knows how to use a rifle. A few men in the right, and knowing they are, can overturn a throne. A ravine in the mountains is better than a plain. Woods and mountain sides can be held by resolute men against ten times their force. When the bondsmen stand like men, the Nation will respect them. It is necessary to teach them this."

John H. Kagi, one of the insurrectionists, had spoken to several of his friends of Brown's plans for an attack on Harper's Ferry. He had marked out a chain of counties extending continuously through South Carolina, Georgia, Alabama and Mississippi. He had travelled over a large portion of the region indicated, and from his own personal knowledge, and with the assistance of Canadian negroes who had escaped from those States, they had arranged a general plan of attack. The counties in the chain were those which contained the largest proportion of slaves, and would, therefore, be the most suitable.

The attack on Harper's Ferry was to be in the spring, when the planters were busy, and slaves most needed. The arms in the Arsenal were to be taken to the mountains, with such slaves as joined.

The telegraph wires were to be cut, and the railroad tracks torn up in all directions. As fast as possible other bands besides the original ones were to be formed, and a continuous chain of posts established in the mountains. They were to be supported by provisions taken from the farms of the oppressors. They expected to be speedily and constantly reinforced; first, by the arrival of those, who in Canada, were anxiously looking and praying for the time of deliverance, and then by the slaves themselves. The intention was to hold the egress to the Free States as long as possible, in order to retreat when that was advisable.

Kagi, however, expected to retreat southward, not in the contrary direction. The slaves were to be armed with pikes, scythes, muskets, shot-guns, and other simple instruments of defense; the officers, white or black, and such of the men as were skilled and trustworthy, to have the use of Sharp's rifles and revolvers. They anticipated procuring provisions enough for subsistence by forage, also arms, horses and ammunition. Kagi said that one of the reasons that induced him to go into the enterprise was a full conviction that at no very distant day forcible efforts for freedom would break out among the slaves, and that slavery might be more speedily abolished by such efforts then by any other means. He knew by observation in the South that in no point was the system so vulnerable as in its fears of a slave-rising. Believing that such a blow would soon be struck, he wanted to organize it so as to make it more effectual, and also by directing and controlling the negroes, to prevent some of the atrocities that would necessarily arise from the sudden upheaval of such a mass as the Southern slaves.

John Brown and Kagi were in Cleveland, Ohio, on the 14th of March, 1859, coming from Canada overland. They remained in Cleveland and in the vicinity for several weeks, and from the third of April to the thirteenth Brown lay sick with fever and ague at the house of a friend in Ashtabula. Kagi remained with him constantly and was a most loyal friend and companion.

On the morning of the 14th Brown left for the East. At Peterboro' he remained over night with his old and staunch friend, Gerrit Smith, and the next two days he spent in Rochester with Fred Douglass. It was there that he first became acquainted with Shields Green, a famous negro. On the evening of his Rochester visit Brown made a characteristic speech to the residents of that city.

He arrived at the town of Westport, Essex County, N. Y., on the 18th of April, remaining until the following day, when he proceeded to his old home, at North Elba, where he remained ten days with his family. He arrived in Boston early in May. On the 8th he spoke at Hartford, and later in the month at Worcester and Boston. In the latter city he made his headquarters at the United States hotel. He was accompanied by Jerry Anderson, a rustic looking youth from Indiana who was afterwards shot at Harper's Ferry. One afternoon the old man sat for his photograph to an artist named Heywood, and from this picture nearly all of the portraits of Brown have been taken. A fews days later he made an appointment with William Hunt, the painter, but the sitting never took place.

Brown visited Collinsville, Conn., on the 3d day of June, and while there made a contract with Charles Blair, gunsmith, for one thousand pikes, which were manufactured and shipped to Chambersburg, Pa., two months later. In Boston he received $2,800 from various sources, and on June 4th a draft from Gerrit Smith for $200. While in Troy, N. Y., June 7th, he sent a draft for $300 to Blair in payment for the pikes.

Returning to Ohio, he spent some days at Ashtabula with his son John, and was at West Andover, and in Portage and Summit Counties sojourning with friends. He was in Akron, O., on the 23d of June, the guest of his son Jason. It was while there, in answer to inquiries, Brown said in substance that he did not know what he should do — that he was an instrument in the hands of Providence for effecting the overthrow of slavery, and expected to fulfil the mission to which he was called — that he might go to New Mexico, or perhaps return to Kansas. To no person in Akron, as far as can be ascertained, did he confide anything of his purposes, except, perhaps, to his son Jason.

Some years ago Jason Brown told the writer that his father asked him to accompany him, but he refused. "You see," said Jason, "I was the biggest

coward in the whole family, and concluded to remain at home. Consequently, father left Akron without me."

Several of Brown's men and two of his sons joined him prior to his departure from Akron, and the party started for Chambersburg, where he received visits from several of his friends in the North. Frederick Douglass visited the old man for two days, and was urged to accompany the party to Harper's Ferry. Douglass not only refused, but endeavored to persuade Brown to abandon the undertaking. The old man was like a rock: nothing could move him, and Douglass bade him farewell and returned to Rochester.

In company with two of his sons and Jerry Anderson, Brown proceeded to Hagerstown, Md., on the 30th of June, and stopped for the night at the Washington House. On the following morning a stage conveyed them to Harper's Ferry. At the hotel he registered as "Smith and two sons," from Western New York, and told Mr. Singling, the landlord, that they had got tired of farming in that region; that the frosts had taken their crops for two or three years; that they were going to Virginia to look out a location for raising sheep and growing wool.

After looking around Harper's Ferry a few days, and prowling through the mountains in search of minerals, as they said, they came across a large farm with three unoccupied houses, the owner, Dr. Booth Kennedy, having died in the spring. These houses they rented from the family till March, and paid the rent in advance; they also purchased a lot of hogs from the family for cash, and agreed to take care of the stock until a sale could be had.

The farm was on the Maryland side of the river, about five miles from the Ferry. Later the party brought a large number of picks and spades and this confirmed the belief that they intended to mine for ores. They seemed to have no settled purpose; but a large number of boxes and packages were sent them by railway. They paid for everything they wanted in hard cash, and were sociable and friendly towards their neighbors.

By the latter part of July, the party had increased to twelve men and two women. The latter were Martha, the wife of Oliver Brown, and Annie, Brown's sixteen year old daughter. Brown advised his friends to direct him as "I. Smith & Sons, Chambersburg, Penn.," and from this town his letters were mailed. Kagi was stationed in the village to receive and forward letters, arms and men. Of their life at Kennedy Farm, Cook wrote in his confession that the greater part of the men kept out of sight during the day for fear of attracting attention. The arms and supplies were carted from Chambersburg to the farm. The spear heads and guards came in strong boxes and the shafts passed for fork handles.

An August a young man, named Francis Jackson Merriam, joined the party and gave Brown six hundred dollars in money. In September Fred Douglass again visited the old man, and urged him to abandon his project. The negro Shields Green, had accompanied Douglass, and when the latter asked him whether or not he would return to Rochester, the negro said: "I b'lieve I'll go wid de ole man."

"In parting from Brown," writes Douglass, "he put his arms around me in a manner more friendly and said, 'Come with me, Douglass; I will defend you with my life. I want you for a special purpose. When I strike, the bees will begin to swarm, and I shall want you to help me hive them.'"

It was on the 23rd of August, that Secretary of War, Floyd, received the following letter, postmarked Cincinnati, and without signature:

CINCINNATI, August 20th.

Sir:—I have lately received information of a movement of so great importance that I feel it my duty to impart it to you without delay. I have discovered the existence of a secret association, having for its object the liberation of the slaves of the South, by a general insurrection. The leader of the movement is "old John Brown," late of Kansas. He has been in Canada during the winter, drilling the negroes there, and they are only waiting his word to start for the South to assist the slaves. They will pass through Pennsylvania and Maryland and enter Virginia at Harper's Ferry. Brown left the North about three or four weeks ago, and will arm the negroes and strike the blow in a few weeks. They have a large quantity of arms at their rendezvous, and are probably distributing them already. As I am not fully in their confidence, this is all the information I can give you. I dare not sign my name to this, but I trust you will not disregard the warning on that account.

No attention was paid to this letter, Secretary Floyd feeling satisfied in his own mind that a scheme of such audacity

could not be entertained by any citizen of the United States. He thought no more of the letter until the attack on Harper's Ferry.

Later in September, Brown made known to his men the details of his proposed attack at Harper's Ferry. He had with him nearly thirty men, well-equipped. Others arrived early in October. The people living in the immediate vicinity regarded the movements of the party with much curiosity, occasionally calling at the farmhouse. The men spent their time in the mountains, and the neighbors noticed that they brought home a very limited amount of game. On one occasion a neighbor remarked to Brown that he had observed twigs and branches bent down in a peculiar manner in various places in the mountains. Brown explained to him that it was the habit of the Indians in travelling through a strange country, to mark their path in that way, so as to find the route on their return. He had no doubt, he said, that Indians passed over the mountains unknown to the inhabitants.

On the first of October Brown sent the two women back to North Elba, where his wife was still living with the younger children. He accompanied them as far North as Harrisburg, Penn. John Brown, Jr., had remained in Ohio, and during September visited Boston. He secured a considerable sum of money for his father, and forwarded a number of recruits to Kennedy Farm. Among the men secured by him was Leary, a native of Lorain County, Ohio.

Early in October, the old man began making his final arrangements for the attack and wrote a letter to Dr. Alexander Ross, then a well-known Abolitionist of Toronto, Canada. The letter though exceedingly brief is characteristic:

CHAMBERSBURG, PA., October 6th, 1859.

Dear Friend:—I shall *move* about the last of this month. Can you keep *the cause* in the way you promised? Address your reply to Isaac Smith, Chambersburg, Penn.

Your friend, JOHN BROWN.

"On the ninth of October," writes Dr. Ross, "I was somewhat surprised to receive the announcement that Captain Brown was to make the attack on the Slave States in the course of a few weeks. I had promised him during our interview at Springfield, Massachusetts, that when he was ready to make his attack on the Slave States, I would go to Richmond and await the result. In case he were successful in his attack, I would be in a position to watch the course of events, and enlighten the slaves as to his purpose. Accordingly I went immediately to Richmond."

Among other arrangements, Brown issued general orders to his men, under date of October 10, 1859, a week before the attack. He arranged his party into two forces, each force consisting of two battalions. Provision was made for officering and arming seventy-two men to each battalion. Each company was to be divided into bands of seven men, and every two bands made a section of men under a sergeant. Nearly all of the men at Kennedy Farm were commissioned as officers, the old man depending upon recruits and slaves to fill up the ranks as privates. Among Brown's papers was found a list of officers and men, as follows:

1. John Brown, commander-in-chief. 2. John Henry Kagi, adjutant, and second in command. 3. Aaron C. Stephens, captain. 4. Watson Brown, captain. 5. Oliver Brown, captain. 6. John E. Cook, captain. 7. Chas. P. Tidd, captain. 8. Wm. H. Leeman, lieut. 9. Albert Hazlett, lieut. 10. Owen Brown, lieut. 11. J. C. Anderson, lieut. 12. Edwin Coppoc, lieut. 13. Wm. Thompson, lieut. 14. Daupin Thompson, lieut. 15. Shields Green. 16. Dangerfield Tenby. 17. John A. Copeland. 18. Osborne P. Anderson. 19. Lewis Leary. 20. Stewart Taylor. 21. Barclay Coppoc. 22. Francis J. Merriam. 23. John Anderson.

One of his chief aids was John E. Cook, a young man who had resided for many years near the Ferry. He had become acquainted with Brown while on a visit in Kansas.

Why Harper's Ferry had been chosen for the scene of action has been a question of much consideration. There were few slaves in the town, but in the adjoining county of Jefferson, out of a population of ten thousand, there were over four thousand slaves and five hundred free blacks. Within a radius of thirty miles of the Ferry there were no less than twenty thousand slaves, of whom but two or three thousand were capable of carrying weapons. The old man doubtless intended to have a rendezvous whereby the slaves could join him

at night and aid in the attack. He had once said to a colored clergyman:

"I desire to make a few midnight raids upon the plantations in order to give those who are willing among the slaves an opportunity of joining us or escaping, and it matters little whether we begin with many or few. Having done this two or three times, until the neighborhood becomes alarmed and the generality of the slaves encouraged, we will retire to the fortresses of the mountains, and, ever and anon, strike unexpected, though bloodless, blows upon the old Dominion; in the meantime sending away those slaves who may desire to go to the North. We shall by this means conquer without bloodshed, awaken the slaves to the possibility of escape, and frighten the slaveholders into a desire to get rid of slavery."

The least force Brown expected the Government to send against him was an army of twenty thousand, and his plans were so laid that they could never capture over one hundred of his men at a time, and of these all but two or three would be fugitive slaves. The slaveholders were to be taken prisoners where they stood in the way, and injured personally only if they resisted. He desired to show the slave-holders from the first the humanity of his intentions.

On the morning of October 12, Brown, accompanied by Kagi and Merriam, proceeded to Philadelphia, to purchase military supplies. Merriam returned to Harper's Ferry on the 15th, while Brown and Kagi left for Baltimore. The old man had for some weeks suspected that some one had been playing him false. While making a number of small purchases in Baltimore, he accidentally received intelligence of such import that he decided to "strike the blow" at once. He reached Kennedy Farm on Saturday night, October 15th.

He had originally intended to capture the Government Arsenal at the Ferry on October 24th or 25th, and notified his friends in the North that he would move upon that date. John Brown, Jr., who was in Ohio, was to have started for Chambersburg on October 24, so as to join the party the day before the attack. Brown had also arranged with a large number of slaves in the vicinity to be ready for action on the 24th, and fully seventy-five men were expected to take part in the enterprise.

At ten o'clock on Saturday evening, Brown called a meeting of his men, and gave each a detail of his plans. On Sunday evening at six o'clock another meeting was held. Brown made an earnest speech, remarking at its close:

"And now, gentlemen, let me press this one thing on your mind. You all know how dear life is to you, and how dear your lives are to your friends; and in remembering that, consider that the lives of others are as dear to them as yours are to you. Do not, therefore, take the life of anyone if you can possibly avoid it; but if it is necessary to take life in order to save your own, then make sure work of it."

Guards were placed on duty about the house, and the men lay in waiting for the morrow, when John Brown was to strike the first blow at Slavery and raise the flag of insurrection. How the venture fared, and what to John Brown himself were its issues, are well-known matters of history, and need not here be gone into.

WILL M. CLEMENS.

* * *

"From the earliest stages of Hall Caine's literary career as a novelist until now his impulse has not changed, but he has made a steady advance in craftsmanship. In each of his books he strives for an increasing stress of passion, a sustained crescendo, a full and steady breeze for the beginning, and then a gale, a tempest, a tornado. The story is always constructed with this view towards emotional growth and culmination. Sometimes he lets us see the effect this prodigious task imposes upon him, but in his later work more and more rarely. The natural temptation is toward a resonant and insistent eloquence, and he occasionally still forgets that he might profitably leave the catastrophe he has created to make its own impression. The artistic demand in the form of work to which his instinct draws him is heavier than in any other. It is simply to be white-hot in purpose and stone-cold in self-criticism at the same instant of time. If we except George Meredith, who is quite *sui generis*, and Rudyard Kipling, Hall Caine has less of the mark of his predecessors upon him than any of his contemporaries. The faculty of daring is sometimes an essential to the story-teller's art, and Hall Caine has it in abundance, not merely in the occasional facing of improbabilities, but in that much loftier and more admirable form where it enables him to confront the cataclysmic emotions of the mind, and to carry to a legitimate conclusion scenes of tremendous conception and of no less tremendous difficulty."

SOME TYPES OF MODERN MEN OF SELF-CULTURE:

V.—ELIHU BURRITT, THE "LEARNED BLACKSMITH" *

IN Elihu Burritt—the fifth of our series of sketches of Modern Men of Self-Culture—we have another and notable instance of the many men of our age who, with profit to their fellowmen, have toiled alike with hand and brain. In many respects, this indefatigable worker at the forge and anvil was a remarkable man. He was this emphatically if we consider the fact that he was entirely self-taught, though, in the academic sense, he can hardly be called a scholar. In early youth he manifested a wonderful gift for acquiring languages, and his linguistic attainments grew with the passing years. Wide indeed was the range of his philological studies, for not only did he know Latin, Greek, Hebrew and many Oriental tongues, but he was familiar with almost all the languages of modern Europe. Among his published works, some thirty in number, is a Sanskrit Handbook, and he is known to have left behind him at his death a series of Simplified Grammars and Ready Exercises in Hindustani, Persian, Turkish, Arabic, and Hebrew, all of which, we believe, were in shape for publication. He was moreover an expert mathematician and an adept in philosophy, and added to all this he was an experienced journalist, an instructive lecturer, and an extensive and intelligent traveller.

But this enumeration of Mr. Burritt's vast array of acquirements omits the more important and highly valued of them all—the gifts of heart which led him to devote a long and unwearying life to the service of his fellowman. This was manifested in numberless ways, but most signally in his arduous labors and earnest zeal as an apostle of peace and universal brotherhood. Of the distinguished advocates of the doctrines of the Peace Society Elihu Burritt was the most ardent and conspicuous American representative. In the interest of International Arbitration he labored strenuously, going from country to country in the Old World, at the period full of agricultural or industrial distress, or stirred by the demon of revolution. In this cause he was in advance of the times, though there were many who stood by him in his humane and philanthropic crusade, and zealously supported him in the press and on the platform. Among the latter were such apostles of Peace as John Bright and Richard Cobden, besides a number of prominent Frenchmen and Belgians.

Another cause which enlisted the sympathies of Mr. Burritt at this time was that of International Penny Postage, a crying need of the period, since the ocean postal rates between the nations were then a crushing restriction, and as Mr. Burritt argued, hindered all friendly international as well as social intercourse.

The objects of Mr. Burritt's efforts were akin, though on a larger scale, to those that had been so strenuously and persistently advanced in England by Mr. (afterwards Sir Rowland) Hill, and which both men were to live to see virtually accomplished. Interest in this country in the project of cheaper ocean postage Mr. Burritt was enabled also to arouse, and his efforts on its behalf soon interested men like the Hon. Edward Everett and Charles Sumner, who greatly aided him in his beneficent work. Save in the form of postal cards, we have not yet, however, secured to the full all that Mr. Burritt sought to accomplish. Yet what has been gained—in the great reductions in the rates that have taken place—we all know, and no little credit is due to Mr. Burritt for his many years' labors, which included besides lectures and public addresses, the preparation and distribution of millions of leaflets arousing widespread interest in the scheme.

But before we go further with our sketch, let us glean a few facts concerning the early life and self-training of this worthy gentleman whom the world best knows as "the learned blacksmith." Like many men who have accomplished much for their kind in the world, Mr. Burritt's career had little that was eventful in it, if we accept the public receptions given him from time to time, which were in the nature of ovations, as testi-

* For the earlier sketches of this series, see the study of Hugh Miller, the Geologist (Jan. 1897); George Peabody, Philanthropist (Feb. 1897); Peter Cooper, Philanthropist (March, 1897); and Rev. Robert Collyer, "the Blacksmith Preacher" (April, 1897). The subject to be dealt with in the June No. will be Abraham Lincoln.—ED.

fying to the philanthropic character and elevated aims of his useful life. In manner he was modest and unassuming; of kindly, affectionate nature and quiet, methodical habits; without great ambitions, but always eager to add to his mental resources; and above all filled with an overflowing love for his fellowman. Added to this, he was a man of Christian principle, at all times in earnest, and invariably truthful, honest and sincere. He was the youngest son of a family of ten, the children of a farmer-mechanic residing in New Britain, Connecticut, who, we are told, plied the shoemaker's hammer and awl during the winter months, and the hoe and sickle in summer. On the death of his father, in 1828, when Elihu was seventeen years old, the latter apprenticed himself to a blacksmith in New Britain and followed that occupation for a number of years. His schooling was, in the main, scant, and in consequence of his father's long illness, it was fitful. From his brother, Elijah, a graduate of Williams College, he made up for a while his educational losses by attending school, at the age of twenty-one. This he did for a term or two, during which he learned some mathematics, for which he had a natural taste, designing at this time to become a surveyor.

Before leaving the anvil for this term of study, he was, we learn, in the habit of practicing on problems of mental arithmetic, which he extemporized and solved while blowing the bellows. These mental exercises were afterwards renewed, and his quick mind enabled him to tackle more difficult problems, and to take advantage of what he called "corner moments" to study Greek, Latin and French, though against the snatched moments for these studies he had often to do double duty at the forge. Later on, he conceived the idea of going for a while to New Haven, that he might pursue Greek in the classic atmosphere of Yale. Here he determinedly mastered a good deal of Homer's "Iliad," with no other help than a Greek lexicon with Latin definitions. Having given the winter to Homer, and to the intermittent study of Latin, French, Spanish, Italian, German, and even Hebrew, he returned to New Britain with a naturally quickened relish for the languages, ancient and modern, though under increasing necessity to provide for his daily bread. After an unsuccessful attempt to establish himself in business, he made his way on foot to Boston, thence to Worcester, where he resumed his work at the anvil, with happy interludes in mental acquisition, stimulated by access to the large and rare library of the Worcester Antiquarian Society.

Here we find the young linguist making rapid progress in his studies, and enormously enlarging the range of his philological attainments. The fame of the scholarly youth now begins to reach distant ears, for he has written a modest letter in the Celto-Briton tongue to the Royal Antiquarian Society of France, seeking counsel in his studies; and even Boston has heard of him, for the Governor of the State invites him to dinner and, on behalf of some generous friends of letters in the great city, offers him gratuitously the facilities of the University of Harvard. The latter offer he however declines, "prefering both for his health and other considerations," we are told, "to continue his studies in conection with manual labor."

In 1841, the fame of "the learned blacksmith" had so far grown that we find Mr. Burritt taking to the lecture platform and editing a weekly paper in Worcester devoted to the advocacy of "peace, temperance, and self-cultivation." He also at this time espoused the cause of slavery abolition, but his chief engrossment was the advocacy of universal brotherhood and the amicable settlement of international controversies through arbitration. In the furtherance of his Gospel of Peace, he founded at this time what he called "The Olive Leaf Mission," and paid a visit to Europe, where he lectured, founded Peace Leagues, and interviewed the English government on his pet subject of international penny postage. Much good, apparently, was accomplished by the "Olive Leaf Mission," since the issues of that anti-war organization were circulated broadcast, and translations appeared on the European continent in "more than forty different journals, from Copenhagen to Vienna, and from Madrid to Stockholm." It moreover received the support of many influential writers, including British and American divines and statesmen. After spending three years abroad, part of the time engaged in visiting Ireland, then in the depths of its wretchedness, owing to the famine of

1846–47, he returned to his native home, where he was received with many gratifying evidences of public appreciation and good will.

The good work so earnestly set in motion by Mr. Burritt was actively taken up in Europe by many distinguished inculcators of the principles of peace, and, as a result of their advocacy, a great Peace Congress was held in London in 1851, which drew Mr. Burritt once more across the Atlantic to take part in the demonstration. The movement received no slight impulse from the simultaneous gathering of the nations in the British metropolis to inaugurate the first of the great international expositions held that year — the embodiment of an idea first suggested by Prince Albert, the consort of Queen Victoria. The success of the Congress held in London, as well as of those held in the following years at Manchester and at Edinburgh, was most gratifying, and did much to repress the rising revolutionary tide, industrial and political. There was especial need for the calling of the second Peace Congress in 1852, since that was the year of the *coup d' état* in France, which aroused in England much of the old hereditary suspicion and prejudice towards the French nation and its usurping Emperor. Despite the efforts of these several Congresses to bring about the millennium and induce concord among the nations, two years later saw England, France and Italy espouse the cause of the Turk against the Muscovite in the war in the Crimea. Not many more years were to elapse ere Mr. Burritt saw on the vast theatre of his own land as prolonged and sanguinary a defiance of the Gospel of Peace.

These calamitous outbreaks of the war-spirit must no doubt have been vexing to the soul of the pacific Elihu Burritt, though the suspension of his labors in Europe gave him the opportunity to turn his philanthropic eyes upon his own country, where for a time he preached the gospel of "Compensated Emancipation." His proposition was characteristic of him, and creditable to his humanity, viz. — to dispose of the public lands throughout the United States and apply the proceeds to the purchase of the slaves. Just as the scheme was beginning to commend itself to the nation, unhappily the raid upon Harper's Ferry (some details of which are elsewhere given in the present magazine) occurred, and closed the door against all overtures or proposals of the kind.

In 1863, Mr. Burritt once more turned his face towards England, this time to prosecute a long cherished project — a tour on foot throughout the United Kingdom. The results of two of these novel but interesting tours in Britain, Mr. Burritt published in the delightful volumes, which are no doubt well known to readers of SELF CULTURE. They are entitled "A Walk from London to John O'Groats," and "A Walk from London to Land's End and Back." In these entertaining volumes, their author not only indulges himself in giving expression to his keen appreciation of the beauty of Old England, but has the opportunity, of which he takes hearty advantage, to enlist the sympathies of his readers in the toiling masses that make up the congested centres of Britain's industrial seats, and of those more scattered millions that form the humble but sturdy peasantry of the nation.

A third volume of the series, issued in 1866, entitled "Walks in the Black Country and its Green Border Lands," deals with the various manufacturing towns and villages in the Birmingham district. This work Mr. Burritt compiled after his appointment, in the Spring of 1865, as Consular Agent for the United States at Birmingham, and it was undertaken mainly with the view to collect and communicate to the Department at Washington facts relating to the industrial pursuits and productions of the region of his Consulate. The work is specially valuable as an economic handbook, while its two predecessors have their chief interest in the more general, historical, topographical and social features of England and Scotland. In 1870, with the election of General Grant to the Presidency, Mr. Burritt was superseded in the Birmingham Consulate, and after a six weeks sojourn at Oxford, where he had the honor of the friendship of many distinguished men, Professor Max Müller among the number, he returned to his own land and once more to his native town in Connecticut, with leisure to pursue his interrupted linguistic studies and pass the evening of his days in works of charity. Here, some nine years later (March 6, 1879), he passed into the Beyond, leaving a fragrant memory behind him.

G. M. A.

THE STORY OF HUMAN PROGRESS:

THE FRENCH REVOLUTION *

IT may be safely said that no event in the history of the world has been so momentous, or has brought with it consequences so immense, so far-reaching, and so enduring as the French Revolution. Nor is it difficult to account for this. The place of France among the nations of Europe, the shocking misgovernment of the country during the old régime, the character of the people, and the influence of new points of view in regard to the nature and the rights of man, all combined to bring on the tremendous conflagration.

Progress and Revolution As civilization advances and the sense of human dignity is developed, it is inevitable that the inhabitants of a country should insist on taking a part in its government, and an increasing part. And this may be accomplished by gradual progress or by revolution. In England the so-called revolutions were little more than restorations of the normal state of things, which had been disturbed by the folly or self-will of the sovereign. In France the case was quite different. It was not merely that the feudal system gained a strength in France which it never had in England, but the French people never had enjoyed those free institutions which the English had brought with them from their German homes.

The Ancien Regime The story of the *ancien régime* has been told with fullness and accuracy by de Tocqueville and Taine, and only the slightest summary can be attempted here. France was constituted out of a number of Provinces originally either independent or loosely connected with the Empire. Gradually they became fiefs of the King of the French, and finally they were incorporated into the Kingdom by intermarriage, by conquest, and by common consent. Prominent among those who accomplished this work of unification were Louis XI., Francis I., Henry IV., and the great Cardinal Richelieu. By the age of Louis XIV. all power had been concentrated in the sovereign, yet the nobles and large landed proprietors retained rights of taxing and tithing, which were oppressive to the people and crushing to their industry. At the same time, as the nobles were now deprived of their powers of government, they collected round the court at Versailles, losing all interest in their estates and their tenants, except as the means of providing for their luxury and dissipation.

Misery of the People The condition of the poorer classes was wretched beyond our power of imagination. Arthur Young, who travelled in France the year before the Revolution, and has left the most interesting and valuable account of the state of the country, tells us: "There are no gentle transitions from ease to comfort, from comfort to wealth; you pass at once from beggary to profusion. The country deserted, or if a gentleman in it, you find him in some wretched hole, to save that money which is lavished with profusion in the luxuries of a capital." A poor woman in Champagne told him that "her husband had but a morsel of land, one cow and a poor little horse, yet he had 42 lbs. (a franchar) of wheat and three chickens to pay to one seigneur, and four franchars of oats, one chicken, and one shilling to pay another, besides very heavy *tailles* [poll tax] and other taxes. She had seven children. . . . This woman at no great distance might have been taken for sixty or seventy, her figure was so bent and her face so furrowed and hardened by labor, but she said she was only twenty-eight."

* See the articles in the Encyclopædia Britannica on France, E. B., vol. ix, page 596; Marie Antoinette, vol. xv, page 540; Robespierre, vol. xx, page 601; Danton, vol. vi, page 815; Marat, vol. xv, page 526; Mirabeau, vol. xvi, page 493; Turgot, vol. xxiii, page 627; Lafayette, vol. xiv, page 201; Necker, vol. xvii, page 312; Philippe Égalité (Duke of Orleans), vol. xvii, page 853; Diderot, vol. vii, page 193; Voltaire, vol. xxiv, page 285; The Encyclopédie, vol. 8, page 197; and Rousseau, vol. xxi, page 23. Consult also Guizot's "History of France"; Thiers' "French Revolution"; Morse Stephen's "French Revolution"; Carlyle's "French Revolution"; De Tocqueville's "L'ancien régime et la revolution"; Taine's "L'ancien régime"; Mignet's "French Revolution"; and Mrs. Gardiner's "French Revolution," in the Epochs of History series.—ED.

Disquiet People in such a state were not far from insurrection. If the crops of one season failed, they were under the necessity of begging or stealing. There was no legal provision for the relief of the poor, and multitudes were kept alive chiefly by the convents and also by bishops and grand seigneurs. Such a state of things by itself need not have produced a revolution, but it is evident that the materials existed and waited only for the torch to be applied. An English traveller, twenty years before the actual outbreak, declared that he saw in France all the signs of an approaching revolution. And these were found not merely in the condition of the people, but in the state of public opinion, in the ideas which had gained currency in all classes of the community, promulgated by the free-thinkers of the eighteenth century.

Voltaire and the Encyclopedists First among these were Voltaire (1694–1778) and the Encyclopedists. Voltaire was not an atheist, but he was a "free-thinker" and a sceptic; and he was an advocate of religious liberty. He considered the Church of his own country and time to be the opponent of all true progress. But his successors went further. Diderot (1713–1784), the founder of the "Encyclopédie," at first a Deist, became something like a Pantheist. La Mettrie (1709–1751) and d'Holbach, the author of the "Système de la Nature" (1770), were materialists and atheists. But the whole tendency of the times was to have all such questions open and undecided. And the Church had no moral or spiritual power which could oppose effective resistence to the movement. Persecution, which was occasionally resorted to, only fanned the flame of revolution. And the political economists, in a different way, began to promulgate principles which undermined the selfish and short-sighted policy of the old régime. The first edition of Adam Smith's "Wealth of Nations" was published in 1776, two years after Louis XVI. came to the throne. The economists were no less ardent advocates of liberty than the Voltaireans. Moreover, the "Social Contract" of Rousseau (1762) had carried everywhere his protest against the artificiality of society, and had declared that "man is born free, but everywhere is in chains."

Louis XVI When Louis XVI. came to the throne of France, it was becoming clear that some change must be made; and the young king did not seem unwilling to enter upon the path of reform. If his Queen, Marie Antoinette, an Austrian Princess, could have seconded him, and if the nobility of France could have seen that the time was come when important reforms had to be carried out, France might have entered upon a course of rational reform, and the Revolution in its most terrible form might have been averted. But those changes had to come — one way or another; and those who had profited by the scandalous abuses of the past were not in the least prepared to help them onward, so the river of progress was turned into the deluge of revolution. Louis himself, a man of good character and of excellent intentions, had neither the wisdom to understand the whole significance of the movement, nor the strength to carry through any purpose he might form. Mr. Carlyle says his greatest fault was that he was continually saying Yes *and* No, instead of Yes *or* No. Either might have done, he thinks, but both could not.

Turgot, 1774-1776 Louis XVI. was fortunate, or might have been fortunate, in his first Controller-General, Turgot, a man of integrity, ability, and experience, who took in hand to bring about the reforms obviously needed for the prosperity of the country, which was steadily decreasing in wealth and in population. The principal of them were the removal of restrictions on the internal trade of the country, especially in grain and wine, the abolition of forced labor, and the concession of liberty to the workman to exercise what trade he pleased. Several other reforms were projected by Turgot; but the nobles could not see the necessity for giving up their privileges, the Queen disliked Turgot, and the King was induced to dismiss him. There was no other man with the qualities of Turgot who could be found to take his place. It is a well-grounded opinion that he was the greatest statesman France had seen since Richelieu. The Austrian ambassador told the Queen's mother, Maria Theresa, the danger of the situation. Turgot, he said, was "of high repute for integrity," and "loved by the people; and it is

therefore a misfortune that his dismissal should be in part the Queen's work. Such use of her influence may one day bring upon her the just reproaches both of her husband and of the entire nation." A prophecy most sadly fulfilled.

Necker, 1776-1781. Calonne, 1783-1787. Brienne, 1787. Necker, 1788

The dismissal of Turgot was the failure of the King and aristocracy to deal with the crisis. Turgot was succeeded by Necker, a financier of ability and a man of character. The King most reluctantly gave his support to the American struggle for independence, and money had to be raised. Necker could not get along with the parliaments and resigned. He was succeeded by Calonne, and Brienne, but was recalled in 1788, to the great satisfaction of the whole country, not only because of his well-known financial ability, but because he was known to be opposed to the Court. For all this, he proved unequal to the occasion; but we need not anticipate.

The Third Estate

If reforms cannot be carried out by the machinery already at work, the question arises — What other machinery can be found? And men were busy answering this question. Among others the Abbé Sieyès contributed by a pamphlet on the subject, recommending the assembling of the States-General, and laying special emphasis upon the third estate; which should be everything, he thought; and which was nothing, as he knew. Surely, he argued, the people of France, outside the ranks of the nobility and the higher clergy, had some rights and some capacity for governing. There were about twenty millions of souls in France; and only a a million and a half of these belonged to the two privileged orders. Moreover, it was manifest that these classes were a hindrance to the prosperity of the nation. It was high time that the equality of all the people should be recognized.

The States-General

When it became clear that the States-General must be convoked, the question arose as to the proportions of the different orders, and the order of procedure. The nobility and clergy wanted to have each as many as the third estate, and to debate and vote apart. The middle class people maintained that the two orders together should have no more than the third. To this the King, on the advice of Necker, gave his consent. As to whether they should debate and vote together or apart, he left the question open. The States-General were opened by the King at Versailles on May 5, 1789, with nearly 1,200 deputies, the clergy sending 291, the nobility 270, and the third estate 557. It soon became manifest that the indecision of the King in regard to the method of procedure was most injurious. The nobles and clergy at first refused to enroll along with the members of the third estate. At last about 100 of the clergy did so; and they got to work under the name of the "National Assembly" (June 17, 1789). At last the clergy joined the commons (third estate); and Necker advised the King to yield and assemble the three orders together. But the King, as usual, was obstinate at the wrong time, and shut up the great hall of meeting. The deputies, fearing dissolution, adjourned to a neighboring tennis court, and there took a solemn oath (June 20) that they would not separate until they had established constitutional government on a solid basis. The National Assembly then became the Constituent Assembly, as being occupied with the drawing up of a new constitution.

Union of the Orders

Every act of the King's was calculated to make matters worse. The tennis court, he said, was wanted, and the deputies met in the Church of St. Louis at Versailles (June 22). On the 23d of June they were summoned to a royal sitting, and were told to meet in separate orders. The address was received in silence, and when the King left he was followed by the nobles and superior clergy. The third estate and a large number of the parish priests remained in the hall, and sent a message to the King that they would leave only at the point of the bayonet.

The Duke of Orleans (known afterwards as Philippe Égalité) and forty-six of the nobles joined the commons; and the King then had to tell the rest of them to join the Assembly. The union of the orders was thus effected (June 27, 1789). Necker could do no more, and he resigned. He was ordered to leave the kingdom immediately (July 11).

Untrustworthiness of the Army One serious element of weakness on the King's side was his powerlessness to give effect to his decisions. He could not trust his soldiers, with the exception of the Swiss and German troops; and the very fact of depending upon foreign swords only incensed the people to greater opposition. On the 12th of July some of these troops fired upon an unauthorized procession, and a French guard was killed. This was the first collision of the royal soldiers with the people. The whole guard rose in revolt, swept away the municipality of Paris, who were nominees of the sovereign, elected a new provisional Government and a new Parisian militia. The tricolor was now adopted as the colors of the Constitution, made up of the red and blue, which were the colors of the city of Paris, with the white, which was the old color of France.

Fall of the Bastille, July 14, 1789 The Bastille was the great fortress and prison in the Faubourg de St. Antoine. Prisoners had been kept here for life without having committed any crime, or having any serious charge brought against them. At the time of the Revolution there were hardly any prisoners found within its walls; but it stood to the people as a symbol of despotism, and its destruction was resolved upon. There was but a small garrison of 32 Swiss and 82 old soldiers (Invalides) under the Marquis de Launay, the Governor; but the fort could have been held against the mob. After five hours one hundred assailants and only one of the defenders lay dead. But the Invalides refused to continue the defense, and de Launay had to surrender, pardon and immunity being promised to all. Only six of the garrison were killed, and de Launay, on his way to the Hotel de Ville under the protection of the guards, was seized by the mob and murdered. The fall of the Bastille was a sign that the old order was passing away.

The King at Paris Louis saw that his resistance had been in vain. He now appeared in the assembly, and offered to withdraw his foreign troops; and he recalled Necker. Bailly, president of the Commons at the meeting in the Tennis Court, was made Mayor of Paris, Lafayette, who had fought in the American Revolution, was made commander of the new National Guards. Some of the leaders of the aristocratic party — the Count d' Arbois, the King's brother, and other noblemen — fled from the country. The King himself determined to show his confidence in the people, visited Paris (July 17), and, fixing a tricolor cockade on his hat, appeared on a balcony in front of the Hotel de Ville. It was his acceptance of the constitution, and the enthusiasm of the populace knew no bounds. *Vive le roi* was shouted no less enthusiastically than *Vive la Nation*. If the Queen could have accepted the situation, the monarchy might yet have been saved; but *Diis aliter visum*. All over the country the example of Paris was being followed. Royal officers disappeared; new authorities chosen by the people sprang up, and the National Assembly came to be regarded as the centre of administration.

The New Constitution The oppressive laws were being disobeyed and neglected; but it became necessary to place the regained liberties of the people on a firmer basis. Consequently on August 4 the Assembly got to work on the formation of the new Constitution. Privilege was abolished, feudal usages swept away, equality before the law and personal liberty were proclaimed. Equality became the passion of the people as liberty was of Englishmen.* There was no formal declaration against monarchy; but the French monarchy was no more, since the King, having only a single chamber to initiate legislation and himself only a partial right of veto, was simply in a position to give effect to the will of the people as expressed through their representatives. Unfortunately the people had no political education, and no experience of liberty; and the result of all this was not perhaps wonderful.

Paris at Versailles The price of bread remained high, partly through a failure in the harvest and even more through mischievous laws. Consequently the municipalities provided bread for the populace under cost price. Purchasers stood for hours in *queues* at the bakers' doors, and sometimes had to go away empty-handed. About this

* The details will be found in the Encyclopædia Britannica, Vol. IX., p. 599.

time (October 3) the officers of the royal body guard gave a great banquet at Versailles in honor of a new force of a thousand foreign troops which the King had summoned thither in defiance of the popular will. At this banquet loyalist songs were sung, and the white cockade replaced the tricolor. Exaggerated reports of the proceedings were circulated in Paris, and hungry patriots determined to avenge the insult offered to the colors of the Revolution, reputed to have been trodden under foot. Early in the morning of October 5 thousands of women, joined by men, and by the national guard, reluctantly accompanied by Lafayette, made their way to Versailles. A struggle took place between the populace and the royal guard. Early next morning the apartments of the Queen were entered; and at last the King and Queen consented to return with the mob to Paris. They were conducted to the Tuileries (October 6, 1789).

The Constitution

All this time the Assembly was busy, under various influences, with the work of completing the Constitution. The old courts were abolished, trial by jury was introduced, arbitrary arrest and imprisonment were checked, capital punishment was reserved for three or four offenses. The property of the Church was appropriated by the State. By the abolition of tithes (August 4), a revenue equal to about twenty-five millions of dollars passed into the hands of the landlords and peasant proprietors. But the Church still possessed an income of about sixteen million dollars. All this property was now declared to be the property of the State, which undertook the payment of the clergy. In vain the nobles and upper clergy protested against these measures, which were followed by laws for the reform of the Church. By a code entitled the "Civil Constitution of the Clergy" the old divisions of the Church were abolished. Every department was made a bishopric, and the boundaries of the parishes were changed. Bishops were to be elected by all the electors of the department, curés by the electors of the district. Bishops were to inform the Pope of their election, but not to seek confirmation at his hands. The incomes of bishops were lowered, those of curés raised. The clergy as a whole refused conformity. Those who took the oath to the new Constitution were regarded with contempt and aversion. From this time the party of revolution was the party of infidelity, and Christianity was largely regarded as reactionary. At the same time nobility was abolished.

Federation July 14, 1790

On the anniversary of the fall of the Bastille a great festival was held, a federation for the whole of France, under the presidency of the King, in the Champ de Mars. Talleyrand, Bishop of Autun, celebrated mass at an altar raised in the midst of the square, and blessed the banners of the departments. The thousands present took an oath to be faithful to the nation, to the constitution, the law, and the King. Louis, from his throne, swore to respect and maintain the constitution. The sky was rent with shouts of *Vive le roi*, and all was rejoicing and hope. It was a moment in which a man of power might have decided the future of the country; but Louis could not determine on any clear course. Necker had lost his popularity and resigned (Sept. 4, 1790), and the King had a ministry not of his own choosing.

The King's Position

Louis had two courses before him: either to coöperate with the moderates, like Lafayette, and those who would honestly ward the Constitution and yet support the throne, or to call back the *émigrés* and seek foreign help. He oscillated between these two plans, but finally chose the latter. Before the end of 1790 he was in negotiation with most of the kings of Europe. Almost his only hope now lay in Mirabeau, who, originally a steady opponent of the King's government, now passed over to his side, partly disgusted at the excesses of the Revolution, and partly won by the influence of the Queen. In the midst of his plans for the reëstablishment of the monarchy the great orator died, and the King planned an escape from the country, which might have succeeded had the royal party been content to travel in humbler conveyances. They got out of Paris June 20, 1791, but were stopped at Varennes, and brought back to the capital. The extreme party, headed by the Jacobins, among whom Robespierre and Pétion now became prominent, de-

manded the deposition of the King, (July 17); but Lafayette put down the insurrection with blood. This incident, known as the Massacre of the Champ de Mars, caused a complete separation between the constitutionalists and the ultra-democratic party. Even the Jacobin Club was divided, the more moderate forming the Feuillants, called by the extreme Jacobins the "Club Monarchique."

The Situation

When the Constitution was completed it was accepted by the King, who (September 14, 1791) appeared before the Assembly, and swore that he would observe it faithfully. Everything seemed to go well. The country was pleased, the Assembly thought it had accomplished a beneficent and permanent work, extreme men were all in the background. The new legislative assembly met on the 1st of October, and all seemed loyal to the new Constitution. On the right were the constitutionalists, known as Feuillants, on the left the Girondists, tending to republicanism. The extreme left, which sat on the higher benches, and was known as the "Mountain," was led by Robespierre at the Jacobin Club, and by Danton at the "Cordeliers." Unfortunately the King and Queen had no intention of permanently acquiescing in the new state of things, and the emigrant nobles would hear of nothing that interfered with the abuses in which most of their privileges consisted. "The cowards," wrote Marie Antoinette, not altogether unjustly, "first to abandon us, and then to require that we should only think of them and their interests!" But she had no more faith in the constitutionalists than in the emigrants, for they really left no authority to the sovereign. She could therefore only keep on terms with them until she was in a position to break with them. How could this succeed?"

War

Marie Antoinette cherished the hope of assistance from the Emperor Leopold, her brother; and at a meeting between him and Frederick William of Prussia, at Pilnitz (August 27), they signed an agreement to intervene in French affairs if other European powers would unite, regarding the case of King Louis as interesting all other sovereigns. Without intending to go to war, they hinted that such would be the result unless the King was set free, the emigrants restored, and the Assembly dissolved. The Assembly immediately ordered the return of the emigrants to France on pain of confiscation of property and death. This decree the King vetoed. They next attacked the clergy, refusing their pay and the right to officiate to those who had refused the oath. The King again exercised the veto. The party of revolution murmured the word Traitor. The German princes began to mass troops on the Rhine. The Government resigned, and one was appointed with Roland, the leader of the Girondists, at its head. These took a more decided stand, and the new Emperor, Francis II., demanded that the position of the King and nobles should be replaced as before the Revolution. The Girondist ministry replied (April 20, 1792) by a declaration of war.

Insurrection

The beginning of the war was not favorable to France. The officers had been drawn from noble families, and had gone abroad; and the troops were partly disorganized. An attempt on the Austrians in Belgium failed, and the soldiers said they were "betrayed." Suspicion became general, especially against the Queen. The King refused to dismiss his guard and got rid of his Girondist ministry, who went over to the Jacobins. Lafayette did his best for the royal family, but they would not trust him. A proclamation of his in defense of order was met by the Jacobins raising the populace of Paris against the Assembly (June 20, 1792). They next forced their way into the Tuileries where the King met them with firmness and dignity, wearing the red cap of liberty, so that they were appeased. The King assured them that he would do whatever was required by the Constitution. The King and Queen kept hoping for the success of the German armies. "In a month I shall be free," said the Queen.

The Jacobins organized a new insurrection to "save the Revolution." It came off on the 10th of August. The vanguard consisted of the men of Marseilles, who gave to France the terrible war-song of the *Marseillaise*. The insurrection was led by Danton and swept over the Assembly and the monarchy. An "insurrectionary commune" was set up

at the Hotel de Ville. Mandat, the commandant of the National Guard, was summoned before them, and was massacred before he left the hall. The guards, left without a leader, refused to fire on the people. The King might, perhaps, have been protected by the Swiss guards had he acted with decision; but he wavered, and the guards were massacred and the palace sacked. Louis and his family escaped to the protection of the Assembly, themselves in peril. The new municipality compelled the Assembly to confirm its powers, to order the election of a new national convention; to declare the King suspended provisionally, to dismiss the ministers, and to make into law the decrees vetoed by the King. The Assembly was crushed, the Royal Family were prisoners in the Temple, and the people of Paris were omnipotent, with Robespierer and Danton at their head.

The Triumvirate

Danton was the leading man of the time, and not altogether a bad man, although he affected a roughness and a cynicism beyond what he felt. On the whole, if not a good man he was yet a genuine kind of man. Robespierre, on the other hand, was a fop and a selfish sentimentalist. There was one other, who ought to be named here, Marat, the leading spirit of the "Vigilance Committee," the instigator of all the bloodshed of the Reign of Terror.

French Successes

The prospects of France in the war were far from satisfactory. The Prussians had invaded France in opposition to Dumouriez. The allies had taken Verdun and were besieging Thionville; the road to Paris seemed to be open to them. But Kellermann infused a new spirit into his raw recruits, and under the cannonade of Valmy the invaders drew back. By the 1st of October (1792) not one of them remained in France. The war was carried into Germany. The army of Alsace, under Custine, took Worms, Spires, and Mainz, where were the chief magazines of the allies. Savoy was in possession of French troops, and France bid defiance to the world.

The National Convention and the Republic

The new government showed the nature of the changes which had taken place. The Girondists sat on the right and had a great majority. The Jacobins high up on the left — the "Mountain." Below were the "Plain" and the "Marsh" —the Moderates who leaned to the Girondists. The Jacobins could count upon the support of Paris, now in a chronic state of insurrection. The Convention at once decreed the abolition of the monarchy (September 21, 1792), and proclaimed the Republic. The next day, September 22, is reckoned the "first day of year I. of the Republic." Roland, the leader of the Girondists, remained Minister of the Interior, and made an attempt to suppress the anarchy of the capital and the Jacobins, denouncing Robespierre and the other leaders. But they made little way against the fury of Paris; and, before the end of the year, the Commune of Paris and the Mountain had defeated Roland and the Girondists.

Trial and Death of Louis XVI

The trial of the King began in November, 1792. In December he had been questioned by the Convention. The Girondists, for many reasons, mostly good ones, wanted constitutional means to be used, but the Mountain and the Commune determined that he should be tried by the Commune, and, whatever may be said of the mind of the country, the voice of the country was on the same side. The Convention, therefore, took the matter in hand (January 15, 16, 17, 1793), and by a small majority, 387 against 334, pronounced sentence of death on the King, Philippe Égalité voting with the majority. On January 21, 1793, Louis XVI. was guillotined on the Square (Place) of the Revolution, now known as the Place de la Concorde. It was the end of constitutionalism, as well as of monarchy. The leaders of the extreme party represented a minority in the nation, but they were fanatics who had no doubt as to their obligation to set things right, who had decades of injustice and oppression behind them, who had no faith in the promises of the upper classes, and no belief whatever in the middle classes, and who were quite ready to reduce society to chaos, whatever the consequences might be, and to challenge all Europe to mortal combat without the least regard to the issues.

Robespierre

It was inevitable that Roland should resign, and Robespierre now became leader in the Convention. The Revolution "was the religion of which he was the priest."

He had no apparent vices, he lived simply, denounced the rich and the great, and had among the people, especially women and the weak, the name of a saint. His aim was to realize the dream of Rousseau, and of the Social Contract. He was a sentimentalist and a fanatic—a man who gave up a judgeship because he could not bring himself to condemn another to death, but who, like the man-eating tiger, could not at last be sated with blood enough.

Ascendency of the Jacobins

Dumouriez hoped, by returning to Paris, to restore the Constitution, but his new levies turned against him, and he took to flight. The Girondists were suspected of being in the plot; and the outbreak of a royalist insurrection in La Vendée (March 10, 1793), which, at first, threatened to be successful, roused the Jacobins to fury. If the foreign allies had acted promptly and seized this moment for the invasion of France, their success was almost certain. But the opportunity was lost, and the work of terror was going on in Paris. On the 31st of May Paris, under the guidance of Danton, rose against the Convention. On the 2d of June Marat, supported by the Mountain, a minority of the Convention, overthrew the Girondists, arresting two of the ministers and thirty-one deputies.

The Reign of Terror

The year 1793 proved, on the whole, favorable to the French arms; and the "Reign of Terror" was proceeding in Paris. All who were aristocrats were, as such, condemned; and the Queen, the leading Girondists, Philippe Égalité, and a multitude more passed under the guillotine. Two parties arose, the Hébertists, the more extreme: they were the party of reckless bloodshed which abolished Christian worship, set up a goddess of Reason and professed atheism. The other was the party of the Dantonists or Moderates, who tried to moderate the fury of the time. Early in 1794 the Hébertists were seized and condemned to death (March 24, 1794); but Robespierre would not ally himself with Danton, and the latter became a victim to the relentless and heartless ambition of his rival. This made Robespierre dictator for a season. The Mountain was crushed with Danton, the Commune with Hébert. Robespierre would now bring back the worship of God, and passed a decree, recognizing the Supreme Being and declaring that the soul is immortal. A great fête was held (June 8, 1794) in honor of the Supreme Being. But the Terror went on, apparently somewhat against the will of the dictator (June and July, 1794). But a reaction was coming.

On July 27, 1794 (9th Thermidor), there was an explosion in the Convention. The arrest of Robespierre and his chief supporters was voted. Paris arose to defend them and 200 cannoniers marched to the Tuileries, where the Convention was sitting. But they hesitated, while others rallied to the assistance of the Convention. The resistance ceased. Robespierre, in the attempt to commit suicide shattered his lower jaw. He and his friends were again arrested and next day perished on the scaffold. And thus ended the early history of the French Revolution, which is all that can be told in this place. The moral and the issues of the Revolution belong to the past, the present, and the future.

Of the horrors of the Reign of Terror we get glimpses in various sources, together with an enumeration of the number of Frenchmen who fell victims to the frenzy of the time. M. Taine, estimates the loss of life throughout France at nearly a million. Between April 6, 1793 and July 27, 1794, the tribunals of Paris sentenced to the guillotine 2,625 persons, "while the provincial judges did as much work as the Paris judges." In the small town of Orange alone, they guillotined 331 persons. In the single town of Arras 299 men and 93 women were guillotined. At Nantes, the revolutionary tribunals and military committees guillotined on the average 100 a day, or despatched in all 1,971 victims. In the city of Lyons, the revolutionary committee admit 1,684 executions. The statement of these murders is not complete; but 17,000 have been enumerated. * * Even excepting those who died fighting or who, taken with arms in their hands, were shot down or sabred on the spot, there were 10,000 persons slaughtered without trial in the province of Anjou alone. It is estimated that, in the eleven western departments, the dead of both sexes and of all ages exceeded 400,000. The phrase current at the hideous era was, that "heads fell like tiles."

WILLIAM CLARK, LL. D.

OUR INDIVIDUAL IDIOSYNCRASIES:

A PLEA FOR CROTCHETS ABOUT COOKING AND MODES OF LIVING

WE are all more or less accustomed to treat as an aberration any departure in the habits or social ways of our friends from what we deem conventional or orthodox opinion. Critically examined, the departure from conventional usage which we chide or resent in those we are intimate with is usually a custom which we do not ourselves follow, and is only another way than ours of acting or living. Most people have certain "ways" of living into which they have either unconsciously fallen or have honestly come by from the habits and practices of their parents or friends. These characteristic habits, fashions or practices may be as good, and even better, than ours, though to us they seem peculiar, and as we are unfamiliar with them, we consequently denounce or ridicule them. This attitude towards our friends' peculiarities is often a foolish one, since it is usually difficult and sometimes impossible for us to see wherein they suit them though not us, and are conducive either to their health, their comfort, or their work.

Criticism of the kind we indulge in with reference even to "fads" is often stupid, because unintelligent, and lacking in the tolerance with which we ought to regard departures in the habits and moods of our friends which are at variance with our own manner of acting or of living. A contemporary has just been illustrating the folly we sometimes fall into in criticising each other for idiosyncrasies which hurt no one, but afford no end of opportunities for more or less profitless lecturing. His criticism is directed against those who quarrel with a man for being "nice" about what he eats, and against the "futile asceticisms" which insist upon one refraining from cooling oneself or being comfortable in a hammock or an easy chair. His text is some remark of Tennyson's about bad cooking at a dinner once given him by the wife of Prof. Max Müller. Tennyson, observes the writer, like all truthful men, like Dr. Johnson, for instance, sometimes said bearish things; but, that granted, he insists that it is not to Tennyson's discredit to have cared about his food.

The writer goes on to say that a man is not necessarily a gourmand, and still less a glutton, because he cares that what he eats should be properly cooked, should be appetizing, and should therefore be the food the eating of which burdens him least, and least distracts his thoughts from higher things. There is no reason in the world why men, whether average men or men of genius, should despise the cooking of their food. They never show, or are required to show, the same contempt towards any other art, and on no other is their mental calm more completely dependent. An ill-fitting coat is a worry, but not such a worry as dinners perpetually ill-dressed. To many men, and especially to men whose work is sedentary, or whose brains are fully taxed, food which is at once light and nourishing is an absolute necessity if they are to exert their highest powers; and food of that kind is obtainable only by care in selecting meats, and good cooking when they are selected.

A man should not think too much of his dinner, or devote too much time to preparation for it, or enjoy it too visibly when it has arrived, for all those are animal peculiarities; but to remain content with bad food, when a little more thought or carefulness or criticism would procure it in a state fit to be eaten, is only what Scotchmen used to describe as "a wasting of the maircies." Every other sanitary precaution is enforced on us with the most energetic advice, not only by doctors, but by all other thoughtful friends. No extent of worry and expenditure over drains is considered irrational; we are almost driven with a whip to take regular exercise; and we are worried to death with remonstrances if we happen to belong to the few who like to pass part of the night in reading, or to get up before the hour which housemaids and gardeners deem convenient and usual. We have watched in our time half a dozen different health manias, now for cold baths and wading in wet grass in winter, and again for rough flannels; one year for "hardening" yourself, mostly by

draughts, and another for warmth, painfully, and rather expensively, regulated by elaborate pipes and machinery. There are millionaires who have apparatus even for warming and cooling their carriages according to the season.

Nobody objects to all that unless he is bored to suffocation by descriptions and praises of some scheme which is not his own, when, indeed, he sometimes revolts and grows as crusty as Tennyson is reported to have done; but if a man complains that his meat is hard, or his vegetables are distasteful, or his bread "slack-baked," he is at once condemned as if he had betrayed a vicious inclination. The meat may mean for him insomnia for the night — that is, discomfort increased to torture by exaggerated consciousness — the vegetables may deprive him of the power of eating at all, — we know half a dozen people at this moment who literally cannot swallow lima beans, to the writer a luxury, — and the slack-baked bread may produce a kind of puffiness nearly as insufferable as toothache; but the consumers of such stuff are, without the slightest reason, required to put up with those sufferings under penalty of being condemned as gourmands. Where is the sense of a prejudice like that, of which all householders on the continent of Europe have got rid, in theory at least, but which lingers in England and the United States with such virulence that it has been calculated that a conviction in favor of decent cooking would not only add 20 per cent. to Anglo-Saxon vitality, but would diminish the number of violent murders by 10 per cent., and increase the ratio of marriages to deaths in an indefinite degree?

That account may have in it a flavor of exaggeration, but it is really true that we all, when discussing the noblest kind of life, sometimes get hold of the wrong end of the stick in a very odd way. Our general idea, that the mind should dominate the body, is perfectly right and essential to both intellectual and spiritual advance, but the way to dominate the body is not to bring its smaller discomforts perpetually under the notice of the mind. Nobody who wears a hair shirt thinks the better because he is excoriated. Even Cardinal Newman, who admired asceticism, perceived that, and registered his perception when he warned his hearers that even fasting had its temptations, for it made those who fasted very irritable and rather unfit for continuous work. The end to be sought should be forgetfulness of the body, and that is not to be found either in bad food, or insufficient food, or food entirely opposed to the physical idiosyncrasy of the man who is eating, and who, perhaps, would rather go without than eat freely of either once-baked bread or potatoes. The body should be considered just to the point where its presence is forgotten.

The opinion is given up now, but forty years ago it was considered sinfully effeminate for any one in full health to sit on an easy-chair, though those who endured the straight-backed ones or the stools knew well that their brains and their tempers and their spines were all alike suffering from a restriction which was nevertheless obeyed as religiously as if it had been in some way a moral law. As for taking a siesta in a hammock, that would have been the acme of idle indulgence. We have seen delicate children tortured nearly to death, or indeed over the verge, by what was considered on moral grounds a most beneficial process of "hardening," and knew well one old lady who to the day of her death, at eighty, boasted that she had always longed for a sofa, and had never bought one lest she should be tempted to set the injurious example of reclining. Which won in that contest, do you think, — the mind, with its unsatisfied longing for peace, or the body with its perpetual reminder that in order to be forgotten it ought to lie down?

Of course the dominant idea is sometimes a more or less fixed idea about health, such as the notion that to drink at meals, even if you are thirsty, must be injurious, or the fancy, so common in the Forties, that to eat more than twice a day was debilitating self-indulgence — that particular fad held captive and seriously impoverished the health of entire classes — but at bottom there is always an idea of a certain nobleness attaching to dominance over the body, and a completely erroneous impression how to set about it. Health is the best form of asceticism, the kind of health which some men enjoy whose bodies never remonstrate with their minds, never object to mental labor, and never interrupt meditation by worrying little frets because they are neglected.

There is another kind of asceticism which is nearly as foolish as neglect of food, and which is enforced not by one's own well-guided or misguided judgment, but by external opinion. Almost all men have certain "ways" of living which they have found conducive either to health or work, and a very large section of them suffer greatly from a torrent of criticism for those ways. There are men who never need exercise, or do much better without it, and if they escape a minatory lecture once a week they are greatly favored by fortune. There are other men, quite numerous, who benefit by exercise in big draughts but not in homœopathic doses, who exert themselves furiously once a week, or during an annual holiday, but for the rest of their time benefit most by bodily torpor. They are not scolded because, as a rule, they are considered too far gone for that operation to be beneficial, but they are habitually and very openly disbelieved. They are talking nonsense, it is held, on a matter they know nothing about.

There are thousands of people who are never at peace if they are not warm, and are told by all sincere friends that they are killing themselves with "coddling"; and tens of thousands who can neither think nor work unless they are cool, and who are pestered by every one who knows them about wraps. We used to lecture one old gentleman ourselves because he would ride on top of a tram-car, wanting, he said, full air, and the lectures did not stop when at eighty-four he was more hale than the lecturer at forty-five. Modern biographers are particularly impervious to reason on this point. They note at once the smallest departure from the usual in the habits of daily life, as if it were an aberration, never thinking that their victim probably knows himself a great deal better than they can know him, or is obeying an instinct so deeply planted and as beneficial as that which induces a dog occasionally to eat grass.

There are men, Scotchmen and Scandinavians no doubt mostly, who simply must "get into the cold," up in Canada or the north of Europe, for a few weeks every year, who thirst for it like a Swiss for mountains; and there are thousands of women who would live to be a hundred if they could only have a month a year in a place where they were warm all through. To condemn such instincts as self-indulgent, unless they conflict with clear duties, is foolish, — is in fact, one of the hundred forms of the prejudice which we have described as futile asceticism. It is exactly like the contempt for good food, that is, a mode of making the body troublesome when what you desire is that it should leave the mind free to exert itself without interruption. That is the first curse of the annoyance caused by illness, and especially illness in which there is pain, — you *have* to be thinking of the body just when you do not want. We suppose friends must advise the living, or they would choke with wisdom kept in; but biographers must be more merciful, and, especially if they are describing the great, might leave their little "ways" as unimportant as in their lives they were. Suppose Dr. Johnson touched all the pillars he passed, he was Dr. Johnson still.

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The national monument to the Emperor William, the first Sovereign of united Germany, was unveiled the other day at Berlin by his grandson with military splendor befitting the occasion. The old Emperor's countrymen call him "William the Great," and history may perhaps confirm the title. He was, indeed, great, says the London Times, not in the breadth of his views or the profundity of his insight, but in the manly sobriety of his judgment, the manly firmness of his purpose, and the manly thoroughness of his devotion to duty. He had the plain, unpretentious gifts which belong to a born ruler and are the indispensable foundation of personal greatness on a throne. William I. knew the objects of his policy and how to pursue them without flinching. He knew how to choose and how to trust his counsellors. He knew how to subordinate his personal sympathies and even his personal attachments to the supreme claims of the State. It was on these qualities of the will, quite as much as of the intellect, that the wonderful successes of his life were due and his true claim to greatness depends. His judgment of himself and of the great things done in his reign was eminently modest. The deep sense of religion and of an over-ruling Providence, which the events of the Napoleonic wars implanted in the generation that took part in them, survived in him to his life's end, and doubtless contributed to his humble estimate of his own achievements. But the judgment was also characteristic of his power of seeing things as they really were. When he ascribed the glories of his reign to the great men who had surrounded him in counsel and in the field rather than to himself, he was not far wrong. Only he forgot or ignored the all-important fact that it was he who chose them and he who loyally supported his loyal servants with unwavering courage and confidence in good times and in evil. . . All Germans do well to honor him, not as a prodigy of intellect and genius, but as a wise and a good king who loved and served his fatherland with his whole heart, and knew how to make his love and services conducive to her enduring welfare.

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V MAY, 1897 NO. 2

G. MERCER ADAM, EDITOR
MONTGOMERY B. GIBBS, BUSINESS MANAGER

THE MISSISSIPPI FLOODS

In presence of the calamity which has again visited the regions of the lower Mississippi, and caused ruinous losses by the overflow of the great river, it would seem of all things the most fatuous to blame the National Government, or hold it responsible for the inefficient character of its engineering work. Criticism of the Government on account of these periodic river inundations is about as foolish as was its arraignment last year when St. Louis was devastated by a tornado because the meteorological station failed to give timely warning of the coming cyclone. Responsibility for these recurring floods does not lie so much with the Government at Washington as with the administrations and the farmers of the States to the north of the drowned lands, and with public opinion that sits idle while the lumberman is permitted to denude the country by wholesale of the timber, which, when cleared off, at one time causes drought, and at another removes the checks from destruction by excessive rainfall. Herein lies the problem, and until we see it and act sensibly about it, we shall continue to have such calamities, in spite of our costly system of levees along the Mississippi banks, and all the money we expend on rearing dams and deepening channels throughout the lower reaches of the river.

The folly is aggravated by the fact that we have now to import rather than export lumber, and at the same time to resort to expensive modes of irrigating large tracts of arid lands not very remote from the valley of the Mississippi, while its waters could wisely be used for that purpose if diverted and stored for a crying need during the spring freshets. Until we see our folly and heedlessness in their true light, we repeat, it is useless to rail at the Government, and equally so to anathematize hydrographic engineering because it has failed to hold the Mississippi within reasonable bounds. We have "harnessed Niagara," but we haven't sufficiently harnessed our reason to adapt it to meet a lesser problem than was that of harnessing Niagara.

So radical a change of method as we have hinted at in dealing with the discharge of the Mississippi waters must, of course, take much time and enormous sums of money. It moreover could only be accomplished by the concerted action of all the Middle and Northwestern States. But there can be little question of the permanent advantage and gain that would follow the adoption of the scheme. If the question of expense is advanced to deter a new departure, let us bear in mind how much money has already been spent on the present faulty system. It has been computed that between the years 1789 and 1886 the National Government has expended for repairs on the revetments no less a sum than fifty-one million dollars, which may easily be doubled if we add the expenditures since 1886 and those made by the States of Louisiana and Mississippi.

Meantime, it is worth while considering whether we should not abandon the present precarious system of constructing levees, which only adds to the difficulty of the problem, since it constantly raises the bed of the river above the natural level of the low-lying land, and increases the menace to life and property whenever the flood seasons come. This would mean that the river, throughout its lower stretches at any rate, should be allowed to make its own channel, and that would be detrimental to the present landholder, or "renter," when a flood season came and submerged his land and his crops. Supposing that he escaped with his life, he would, however, be at no serious disadvantage in this, since when the waters withdrew his land would be all the richer, and in increased fertility of the soil he would, in the dry years, more than make up for what he lost in the wet. It is creditable to our humanity to find the present distress so actively and generously relieved, and all must wish that a

speedy end would come to apprehension and anxiety in regard to these destructive floods.

* * *

GREECE, CRETE, AND THE POWERS

The situation has not greatly changed since we dealt with the Eastern question in our last issue, though it would appear to have reached a more acute stage. Any moment may precipitate a conflict, the end of which no one can well foresee. Either of two events, manifestly impending, would in all probability set Europe in a blaze. The Powers, hitherto inert, may put in force their threatened blockade of the gulf of Athens, though England is naturally reluctant to take part in this, as it would commit her, by implication, to a policy which the Liberal party in the kingdom would instantly construe as favoring the Turk, and therefore be unpopular in Britain. Or impulsive Greece on the Thessalian frontier may herself fire the mine by aggression in Macedonia, where the Turkish army is massed in strong positions on the mountain passes, and is said to be "spoiling for a fight. This now appears to have taken place, in the attack of the Greek irregular, and even regular, troops on the Turkish advance line.

Meanwhile, Turkey and Greece both refuse to withdraw from Crete, and the insurgents on the Island keep the international fleets in a state of lively activity in maintaining the police cordon round the Island, and shutting off, as far as possible, the further landing of troops and supplies from the Piræus. So far, the situation, as we have said, is not much altered, while diplomacy halts, and anarchy continues rampant in Crete. Nor is the action of the combined fleets of the Powers an edifying one, since all it has accomplished has been to ward off from the protected zone Cretan attacks upon the Turkish Bashi-bazouks under the ægis of the Powers, and in doing so has killed a number of Christians by firing "upon the wrong side."

The concert of the Powers is still maintained, and for this we are doubtless expected to be grateful. Why, however, they cannot agree (if they are honest in desiring Cretan autonomy) to let Greece have Crete, and so end the vile dominion of Turkey in the Island, which has been ruthlessly misgoverned by the Moslem, is an enigma which puzzles everyone. The three Emperors, who are the chief factors among the six European Powers, of course have their own reasons, and there would seem to be indifference to what becomes of the Christians of the East, while they each keep an eye on the large prospective gains likely to accrue to them from the wiping from the map of Europe of both Turkey and Greece, should these nations fall upon each other and so become the spoil of annexing ambition when spent with the fray. We may be wrong in including Germany in these selfish designs; yet it is difficult to say why otherwise she is hostile to Greece, unless it be on account of the losses which her investing classes have suffered from the plausible unscrupulousness of Hellenic finance. Nevertheless, the re-partition of Southern Europe is ostensibly, if not avowedly, the object which shapes the policy of most of the Great Powers, though we should like to think that they were actuated by higher and more humane motives.

Here is the scheme of partition which a recent high authority quotes as part of the game of present-day diplomacy: "Let Russia go to Constantinople, the Sultan to Bagdad, and Austria to Salonica. Let France take Syria, and give the Turkish islands to Greece. Bid France remain forever in Tunis, and England in Egypt; Italy go to Tripoli and Cyrenaïca, while France and Spain, to make one job of it, should divide the Empire of Morocco between them." These re-divisions, of course, are only likely to come about through war, and it would seem to be war, and not peace, that some, at least, of the Great Powers desire to profit by. If we accept in good faith the professions of the Powers, it is however not war, but the avoidance of it, that counsels their present attitude. As to this, time alone will tell. Time also will show whether restraining Greece from seeking to redeem her kin in Crete from a ruthless and alien domination is a wise or unwise interference in the affairs of Hellas. Her people to-day may not be the salt of the earth, while the Cretans have been so long familiar with Moslem wickedness, that their cause may not be altogether righteous. But is either of them less worthy than the Turk, and is Mohammedan rule to be perpetuated in Crete until Christian subjects there shall meet the same tragic fate as those in Armenia?

THE GRANT MEMORIAL CELEBRATION

The demonstration in New York in connection with the dedication of General Grant's tomb, and its transference from the Grant Monument Association to the city, will have taken place ere this issue of SELF CULTURE reaches our readers. As is wont to be the case with celebrations of a national character in the great city, the spectacular features of the parade outweigh, and tend to minimize, the religious and dedicatory services on the occasion. This, however, is inseparable from all public functions of the kind, whenever and wherever they occur. The thoughtful onlooker, nevertheless, will not fail to let his mind be impressed, in the services at the tomb, with the significance of the religious rite. Nor will he fail to see in the spectacle, besides the desire of the metropolis for a great pageant, the eager wish of the people to show their respect, as well as their admiration, for a national hero.

A noble tribute has been paid by New York in the splendid structure which the city has erected, on an ideally beautiful site, for the last resting-place of the great soldier. It is a shrine worthy of a great name, and a great name in the nation's military annals at least is that of Ulysses S. Grant, whatever may have been his merits as President. In the latter capacity, the qualities were not lacking that marked so emphatically his career as a soldier — good sense, simplicity, and single-hearted devotion to the public service. Naturally, however, it is as a soldier that Grant will chiefly be remembered. To his resoluteness and dogged perseverance the national army at a great crisis of its history owes much of the triumph of its cause. He had many of the qualities of a great commander, and though often unsparing of life, the vigor and rapidity of his movements, no less than the success of his operations in the field, always excited praise. He was also ever above the pettiness which in some seeks the lion's share of the credit in any victory achieved. Merit, moreover, he heartily appreciated in others, while in his friendships he was loyal as well as honest, trustful and sincere.

We have here, however, no intention of summoning from his sleep the great captain of our arms to be judged over again at a Minos' tribunal. All we seek is to note, with brief comment, a significant, but passing event, and to lay a modest immortelle upon the tomb of the great strategist and campaigner. After his active, heroic life, he fitly earns that stately rest in the costly mausoleum which the nation's commercial capital has provided for him. In the marble sarcophagus by the waters of the historic Hudson he will sleep no more reposefully than does the humblest of his command who fell at Chattanooga, Cold Harbor, or Shiloh. But the shrine within the great city will keep green the memory of the hero, and be a reminder, to the youth of the nation who look upon it, of services that were as priceless as they were loyally rendered and patriotic.

THE LOG OF THE "MAYFLOWER"

What has been called the "Log of the Mayflower," about which we had an article in SELF CULTURE for September of last year, and which has hitherto found lodgment among other historic relics in the library of the Bishop of London at Fulham, has been restored to this country through the official interposition of Mr. Bayard, our retiring ambassador at the Court of St. James. The volume, which is in script, and of the highest value genealogically, since it contains a contemporary list of the Pilgrim emigrants, and a history of the first twenty-five years of the Plymouth Colony, is now ascertained to be the production of Governor Wm. Bradford, set forth in his own handwriting, and narrating the annals of the Plymouth Plantation from 1620 to the end of 1646, with a preliminary record back to the year 1602. The priceless manuscript was understood to have been destroyed during the occupation of Boston by the British in 1775. Such, however, was not the case, as a chance reference to some facts in the History by the Bishop of Oxford in 1846 led to a subsequent examination of the volume, and a disclosure of its real character. The surrender and return to this country of the invaluable relic is a friendly, as well as graceful, act on the part of the prelate custodian, with the consent of the ecclesiastical authorities and that of the Government of Great Britain.

EVENTS OF THE MONTH

Saturday, March 13.—Thomas B. Reed was renominated for speaker at the caucus of Republican representatives; the Democrats nominated Joseph W. Bailey, of Texas....The withdrawals of goods from bond were the largest on record....It is said that Russia will propose immediate occupation of Crete by the powers. ....The naval credits demanded by the German government were refused by the budget committee of the Reichstag....War has broken out in Samoa, and the foreign consuls are said to have asked their governments to send warships there....The Carlist agitation is reported to be spreading rapidly in the northern part of Spain ....Home rule has been dropped from the programme of the annual conference of the National Liberal Federation in England.

Sunday, March 14.—The Mississippi River at Memphis is higher than at any time for over a quarter of a century; some towns in Arkansas were submerged, and much loss of stock reported....A meeting in Trafalgar Square, London, to express sympathy with Greece in her efforts in behalf of the Cretan Christians, was attended by about 20,000 persons....Prof. Simon Newcomb, superintendent of the nautical almanac office, was placed on the retired list of the navy on account of age....The Mississippi River is causing a flood at Memphis and in the surrounding country....It is semi-officially announced in Paris that the Powers, while united in principle, have not been able to reach a solution of the Cretan question.

Monday, March 15.—Both branches of the fifty-fifth congress met in extraordinary session; the first message of President McKinley was presented and read; it was devoted entirely to the tariff....Speaker Reed and the other officers of the last house were reëlected; the tariff bill was introduced and committees on rules, ways and means, and mileage were appointed....The French chamber of deputies, by a vote of 356 to 142, decided in favor of common action by the powers in reference to Crete; the condition of things in the island is growing more serious, and in some districts anarchy prevails.

Tuesday, March 16.—The Mississippi River continues to rise in its lower course; nearly a thousand refugees from the flooded district have been removed to Memphis....The people of Greece are determined that their army of occupation shall not be withdrawn from Crete....It is stated that the British troops at Cape Town have been ordered to hold themselves in readiness for an emergency....The University of Cambridge, England, conferred the honorary degree of doctor of science upon Dr. Nansen, the Arctic explorer.

Wednesday, March 17.—Ex-President Cleveland disembarked from the lighthouse tender "Violet" at Cape Charles, Va., and took a train for Princeton....Charges of wholesale legislative corruption were made in the Iowa house, and Speaker Byers resigned pending an investigation....Washington Hesing resigned as postmaster of Chicago in order to make a canvas for the mayorality of that city....The reply of Turkey to the note of the Powers admits the principle of autonomy for Crete, but reserves discussion of the forms and details of such an administration with the diplomatic representatives of the Powers....The admirals of the combined fleets in Cretan waters made a formal proclamation of the intention of the Great Powers to confer upon the island of Crete an autonomous government, subject to the suzerainty of the Sultan.

Thursday, March 18.—The rush of office-seekers to the White House continues, and there are some murmurs of discontent at the slowness with which the President dispenses the patronage.... A Washington dispatch says that of 92 cases of Americans imprisoned in Cuba during the present war, there are but 14 cases pending. ....The Austrian gunboat "Sebenico" has sunk a Greek schooner, with a cargo of munitions of war and a number of Cretan insurgents on board.....The death has just occurred of Prince Yoshito Haranomi Ya, Crown Prince of Japan. ....It is stated that a Federal Union between the Transvaal and the Orange Free State has been decided upon.....Mr. Gladstone published his letter on the Eastern Question.

Friday, March 19.—A "special river bulletin" issued by the weather bureau says that the floods in the lower Mississippi during the next ten days or two weeks "will in many places equal or excel in magnitude and destructiveness those of any previous years."....The Greek cabinet has decided to recall the warships from Crete and send them to Valo, Thessaly, and to push forward the reinforcement of the Greek troops on the Turkish frontier with all possible expedition.....The congress of Venezuela will take up the Guiana question at once, the official copies of the treaty with Great Britain having arrived at Caracas.

Saturday, March 20.—Disastrous floods continue to work destruction to life and property throughout the Mississippi valley.....Admiral John G. Walker was placed on the retired list of the navy.....Major Charles Dick has been appointed by Chairman Hanna secretary of the Republican National committee.....The 93d birthday of Neal Dow, the father of prohibition, was celebrated in Portland, Me.....The Greek admiral has summoned the Turks to dismount their guns at the entrance to the Gulf of Arta in twenty-four hours.

Sunday, March 21.—Notice of the blockade of Crete was served on Secretary Sherman by the representatives of the Great Powers....The situation in the overflowed regions of the Mississippi and Missouri valleys grows worse; the levees are breaking, and rescue and relief work goes steadily on.....The blockade of Crete by the fleets of the Powers began at 8 A. M.... Fifteen Armenians and three Mussulmans were killed in a conflict in Asia Minor.....Services in connection with the centenary of the birth of Kaiser Wilhelm I were held in Berlin.

Monday, March 22.—There was no great change in the flood situation on the Mississippi. ....The Citizens' Union, an independent party whose purpose is to secure a non-partisan municipal government for New York city, effected a permanent organization....The British consul at Canea reports that the Cretan insurgent chiefs

will not be satisfied with anything but annexation to Greece....The monument commemorating the centenary of the birth of William I. was unveiled in Berlin, and the day was observed as a holiday throughout Germany.... The Italian elections on Sunday resulted in the choice of 329 Ministerialists, 75 Constitutional Opposition Candidates, 17 Radicals, and 18 Socialists.

Tuesday, March 23.—The tornado in South Georgia swept the valley of the Chattahoochee; the total deaths reported number thirteen, and at least 200 persons were more or less hurt; the property loss will be very large....Earthquake shocks were felt at Malone, New York, and throughout Quebec and Eastern Ontario....The principal outdoor feature of the celebration of the centenary of Emperor William I., in Berlin, was an historic procession; there were upward of twenty thousand persons in line....It is reported that 700 Armenians were killed in the recent massacres at Tokat.

Wednesday, March 24.—The Republican majority of the ways and means committee have decided to put scientific apparatus and books for colleges and libraries on the free list....A new iron-ore pool was formed at a meeting of manufacturers at Cleveland, Ohio....A heavy snowstorm prevailed in parts of Illinois, Iowa, and Wisconsin....Fighting has been renewed in Crete between Christians and Turks; the Turkish warships fired on the Christians....It is reported in London that the Duke of Leeds will succeed the Earl of Aberdeen as Governor-General of Canada in 1898....The Sultan issued an irade summoning into active service forty-four battalions of the reserves of the second army corps, and the whole of the contingent of 1897....A British government official says the United States Senate has taken all the meaning out of the arbitration treaty, and asserts his belief that the British government will not accept it.

Thursday, March 25.—More than 6,000 colored refugees from the Mississippi River floods are being cared for at Memphis....The Greater New York charter bill passed the State senate at Albany; it has already passed the House....The Cretan insurgents captured Malaxa, driving out and killing all but nineteen of the Turkish troops that composed the garrison; part of the town was blown up with dynamite....The European warships shelled the insurgents....Germany is making preparations to send 3,000 troops to Southwest Africa in April....Lord Salisbury left London for Cimiez, France, where Queen Victoria is staying....Ex-Premier Crispi, of Italy, has been summoned to appear before the judge of instruction to answer charges of illegal financial transactions with the Bank of Naples while he was premier.

Friday, March 26.—It is said that formal application for annexation to the United States will be made by the government of Hawaii through its minister at Washington....President McKinley announced that he proposed to nominate Andrew D. White as ambassador to Germany ... The Mississippi River continues to fall slightly at Memphis and many predict that the worst of the flood situation has passed....The Manitoba legislature has ratified the Laurier-Greenway settlement of the Roman Catholic parochial school question....The German Reichstag passed a bill providing for the payment of members of the Reichstag... The Paris Figaro says that the French minister of marine will ask for a credit of 800,000,000 francs to build forty-five large ships and seventy-five torpedo boats.

Saturday, March 27.—The weather bureau, in a special bulletin on the flood situation, announced that there "is great danger yet to come from the flood in the region from Helena southward to New Orleans."....William T. Adams (Oliver Optic) died in Boston, aged 75. ....It is reported from Madrid that negotiations for ending the war in Cuba are proceeding between the Spanish government and the insurgent leaders.....Secretary Chamberlain, in a speech in London, warned the South African republics to abandon their independent aspirations.

Sunday, March 28.—Senator Hill is trying to reorganize the Democratic party in New York for the campaign next fall.....The crest of the flood wave passes slowly down the Mississippi, causing great anxiety lest the levees break; the greatest danger has been transferred to the levees south of Memphis.....The coal fields of Jackson County, Ohio, have been sold to a London syndicate for $4,000,000.....The sultan of Morocco has forbidden his subjects to make pilgrimages to Mecca on account of the plague. ....Admiral Canevaro, commanding the international fleet in Cretan waters, has asked the Italian government to send immediately a large land force, which is imperatively necessary to cope with the Cretan insurgents. ...It is said the czar has ordered the concentration of 200,000 troops on the four governments of South Russia.

Monday, March 29.—President McKinley made a number of nominations, including those of Charlemagne Tower to be minister to Austria; Thomas Ryan, to be assistant secretary of the interior; Henry Clay Evans, to be pension commissioner, and William S. Shallenberger, to be second assistant postmaster-general.....A large break occurred in the Mississippi levee near Greenville, Miss.... Secretary Sherman appointed Joseph P. Smith, of Ohio, director of the bureau of American republics.....General Ruis Rivera, Maceo's successor in Cuba, has been captured by the Spaniards.....There was an animated debate in the House of Commons on the Cretan question; dispatches from the British admiral in Cretan waters were read.

Tuesday, March 30.—Three serious breaks in the Mississippi levees are causing the inundation of the great Delta, the most valuable of the farming lands of the Mississippi....A tornado struck Chandler, Oklahoma, destroying every building in the town but four; so far as known, at least 25 persons were killed outright, 14 were fatally injured, and 170 wounded....The Greeks attacked Fort Azzedin, which dominates Suda Bay; the foreign warships bombarded the attacking force in support of the Turkish garrison; foreign troops now occupy the fortress....A Manilla dispatch says that in an engagement between Spanish troops and the Philippine insurgents thirty of the latter were killed and 1,097 surrendered.

Wednesday, March 31.—The President sent to the Senate the nomination of Thomas W. Cridler, of West Virginia, to be third assistant secretary of state....The Monon road was formally reorganized at Indianapolis as the "Chicago, Indianapolis and Louisville railroad company."....The British house of commons rejected, by a vote of 317 to 157, the motion of Edward Blake, Irish Nationalist, relative to "an undue burden of taxation upon Ireland."....Rear-Admiral Tirpitz has succeeded Vice-Admiral von Hollman as secretary for the navy in the German cabinet.

Thursday, April 1.—The President nominated Andrew D. White of New York, to be ambassador to Germany, and William F. Draper, of Massachusetts, to be ambassador to Italy; Benjamin Butterworth, of Ohio, was nominated to be commissioner of patents....The French cabinet authorized the introduction of a bill in the chamber providing for the expenditure of 80,000,000 francs for new warships....The French chamber of deputies has passed a bill imposing a tax on foreign vessels entering French ports. ....The German emperor telegraphed his cordial congratulations to Prince Bismarck upon the occasion of the ex-Chancellor's 83d birthday.

Friday, April 2.—The first formal protests of foreign nations against the pending tariff bill have been made by Japan and Argentina in regard to the silk schedules and the duties on hides and raw materials....The German Reichstag adopted a motion favoring the complete abrogation of the Jesuit exclusion law....Great confidence is said to exist in military circles in Constantinople over the issue of a war with Greece, the Turkish army having been efficiently mobilized under the direction of German officers.

Saturday, April 3.—The State department has been informed by the Turkish government that it finds it inconvenient to raise the grade of its mission in Washington to that of an embassy, on account of the increased expense....Mr. Curzon, in a speech in Lancashire, England, replied bitterly to the attacks on the British government's Cretan policy, and referred to the arbitration treaty; M. Hanotaux, French minister of foreign affairs, made an optimistic statement regarding the Cretan situation....The Oxford crew won the university boat race on the Thames, defeating Cambridge by two lengths, in 19 minutes, 12 seconds....Johannes Brahms, the well-known musical composer, died in Vienna.

Sunday, April 4.—Another break in the Mississippi levee at Flower Lake, six miles below Tunica, Miss., occurred, and will probably be the most destructive of those in the Delta; the levee, two miles south of Helena, Ark., gave way last night, and the water will flood a great area, probably reaching Helena....For lack of promptitude in action England, France, and Italy have been deemed by Germany to have encouraged the Greeks and Cretans into lawlessness.

Monday, April 5.—The President made a number of nominations, including that of A. E. Buck to be minister to Japan....Immense damage by the floods is being caused in the Delta country of Mississippi....In the House of Commons Sir William Harcourt asked Mr. Balfour whether the British forces were to be employed in the blockade of Greece, and failed to get a satisfactory answer....In opening the Italian Parliament, King Humbert praised the concert of Europe and called for a strengthening of the navy.

Tuesday, April 6.—President McKinley is considering the adoption of a vigorous policy to secure from the Turkish government the payment of claims preferred by the United States....The President nominated Theodore Roosevelt, of New York, to be assistant secretary of the navy....It is estimated that between 50,000 and 60,000 persons have had their property destroyed and their avocations suspended by the flood in the Mississippi valley....Sir William Vernon Harcourt renewed his motion in the House of Commons praying the Queen to prevent her forces from being used against Greece or the people of Crete....The Sultan of Zanzibar has issued a decree abolishing slavery; the government will pay for all slaves legally held.

Wednesday, April 7.—President McKinley, accompanied by Mrs. McKinley and his private secretary left Washington on the dispatch boat "Dolphin" for a trip of two or three days.... There were sixty-seven appointments of fourth-class postmasters; of these thirty-four were based on resignations, thirty-two on removals, and one on death....Brisk fighting took place in the island of Crete.

Thursday, April 8.—The ambassadors of Germany and Italy and the minister of the Netherlands have protested to the State Department against the high duties imposed by the Dingley tariff... The Porte has notified the Powers that the Turkish garrison will be withdrawn from Crete immediately if the Greeks previously withdraw and the Powers guarantee to pacify the island.

Friday, April 9.—The Mississippi River had reached a higer stage at New Orleans than ever before recorded, and a further rise of another foot is expected....Proposals have been invited by the secretary of the navy for the construction of three 30-knot torpedo boats... Bands of Greek irregulars entered Turkey in the vicinity of Gravena and had an engagement with Turkisk troops which lasted for some hours; the Greeks were surrounded; a greater part of the Turkish division at Gravena is advancing.

Saturday, April 10.—The administration is said to be somewhat anxious over the situation in Hawaii, and two warships will be kept at Honolulu....Ex-Senator Daniel W. Voorhees, of Indiana, died in Washington, aged 70....The invasion of Macedonia by Greek irregulars caused great excitement in Athens; the expedition burned three Turkish blockhouses, and fought a spirited engagement with the Turks; the fighting continues.

Sunday, April 11.—The flood waters have begun to recede from the Mississippi Delta, and the outlook in the Memphis district is more hopeful....The Porte speaks of the Greek invaders in Macedonia as the "regular" troops, and the incursion is regarded in Constantinople as the commencement of war....Japan has decided to send two warships to Hawaii, stopping meanwhile all emigration....Word has been received by the Spanish minister in Washington that 10,803 rebels in the Philippine Islands have surrendered.

INQUIRIES ANSWERED*

Pray advise a young writer how best to get her stories accepted by some of the magazines of the day. Should one offer them at first gratuitously or not? Any advice given in your pages will be gratefully received.

1. There is no royal road to the citadel of an editor's affections unless through conspicuous merit. The one thing to do is to be sure that you have an attractive and inviting theme, then present it in its most telling guise, and keep sending it to one editor after another until you succeed in getting your contribution accepted and attention directed to your work. If your stories are good—noticeably so—don't send them to a poor or indifferent source (that is waste of time), but submit them to the Atlantic Monthly, to the Cosmopolitan, to McClure's Magazine, to Munsey, to Lippincott, or to Scribner's, Harper, and the Century, and trust to merit for a favorable response in time.

2. Give nothing for nothing, for a gift in literary matter is little appreciated by reputable magazines. Offer your paper, modestly of course, on the periodical's usual terms. The remuneration necessarily varies with the periodical, and with the merit of the story and the reputation of its author. The customary honorarium is from three to five dollars per printed page, and from these sums, when a reputation has been gained, to ten dollars and even twenty dollars, per printed page.

I should like to know whether a lens in a telescope of the size of the Yerkes instrument would bring the moon any nearer or appear plainer in detail than the Lick telescope; also if on increasing the size of the lens the object will seem nearer and more distinct.

The lens of the Yerkes telescope is expected to produce a brighter image of the moon and other objects, and therefore plainer in detail, but it will not bring the moon seemingly nearer to the eye. The Yerkes telescope has the largest lens in the world, the clear aperture of the objective being forty inches. The crown lens is two and one-half inches thick at the middle, three-fourths of an inch thick at the outer edge, and weighs two hundred and five pounds; the flint lens weighs three hundred and ten pounds, and the combined lens with its iron ring and cell weighs one thousand pounds; the focus of the Yerkes lens is sixty-one feet.

The Lick telescope has a clear aperture of thirty-six inches, but the focal length is considerably less than that of the Yerkes lens. The size of the image produced by a lens depends upon the focal length of the lens, and is independent of the aperture, the law being that the linear dimensions of the image are directly proportional to its distance from the lens. The brightness of the image is directly proportional to the area of the aperture. The clearness of the details of the object depends upon the accuracy of the construction of the lens, the optical properties of the glass, etc. Read Encyc. Brit. vol. XIV., p. 594, on "Lens-Making," also see Popular Astronomy, vol. 1, p. 176, "The Yerkes Telescope."

Kindly advise me through SELF CULTURE how many telegraph operators the U. S. Government employs under Civil Service rules, where they are stationed, and what is the usual salary paid.

To ascertain the exact number of telegraph operators in the employ of the U. S. Government

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***Note to Correspondents**

The Inquiry Department of SELF CULTURE, *as has been previously announced, is conducted for the benefit of members of The Home University League, all of whom are subscribers to* SELF CULTURE. *There are, however, many subscribers to the magazine who are not members of the League. To such we desire to emphasize our previous announcement: that it is no part of the duty of the editor of* SELF CULTURE *to answer questions, either in the magazine or by letter, for subscribers to the magazine who are not also members of The Home University League. The faculty of The Home University League is engaged in this research, and members of the League are entitled to its best energies and ripest judgment, as well as the benefits of careful research in all known channels of information.*

Subscribers to SELF CULTURE *alone, therefore, will please take notice again that the privileges extended to members of The Home University League of asking the questions which we answer, by letter or in the magazine, are exclusively League privileges. Any one desiring information on the benefits which are extended to League members can obtain a full outline of the League's work by addressing The Home University League, Akron, O.*

☞ *A two-cent postage stamp should invariably be enclosed for reply by those who submit questions to the magazine, or to the Secretary of The Home University League. All interrogations must be accompanied by the name and address (as well as by the number of the League membership certificate in the case of League members) though not necessarily, or at all, for publication.*

☞ *Letters should be plainly written, on one side only of a sheet of paper; and each separate question should have a separate paragraph, instead of being run together in a confused jumble of interrogations. The importance of this to the conductors of the Investigation Department must be obvious to inquirers, whose number is not to be measured by the extent of replies published monthly, since these do not represent a tithe of the questions currently put to us.*

☞ *On one other point we would ask consideration at the hands of our correspondents—namely, that they should give the editor and his staff ample time for research before expecting replies to inquiries. We would also ask that a certain restraint should be exercised in the number of questions put to us in any one letter, and that these shall be legitimate and not idle inquiries, propounded for no practical or informing purpose.*

EDITOR SELF CULTURE.

Akron, O., April 20, 1897.

you will have to write to the Civil Service Commission at Washington, D. C. The number has been variously estimated by different persons of whom we have made inquiry as anywhere from 100 to 300.

Telegraphing has but recently been added to the list of Civil Service examinations, and those desiring to pass such an examination must be prepared to do so at Washington, under the supervision of experts who are employed for the purpose. Operators in the service of the Government are stationed at the different signal stations established at lighthouses and life-saving stations on the lakes and sea-coast, and at postal and military stations, and at the various stations established for meteorological observations. There are also other signal stations, which have been established for the benefit of agricultural and other commercial interests, and in the Marine Department, all of which are in charge of the Chief Signal Officer of the United States. The salaries of operators range from $900.00 to $2,500 per annum, according to time of service, the importance of the station, and the general ability of the operator.

Will you kindly answer the following query in an early issue of SELF CULTURE?

What is meant by the statement, "Stamps in their cancelled condition are more valuable than in the uncancelled condition?" (The above statement is from a newspaper account of the arrest of two boys for sending empty packages through the mail merely to secure the cancelled stamps.)

Stamp collectors and antiquarians will pay more for foreign stamps, or for those of special design, such as the Columbian stamps, issued in honor of the Columbian Exhibition of 1893, etc., than they will pay for the same stamps uncancelled, because they are assured by the stamps being cancelled that they are not counterfeit.

If collectors buy uncancelled stamps and sell them, and they are afterwards found to be counterfeits, the collector is responsible. If they have been cancelled, the Government has to make it good to the collector. Stamps, whether cancelled or not, are always worth their face value, if they are worth anything, to a collector. By having them cancelled, there is no risk to the dealer. There is no penalty, we may add, for sending packages through the mail empty, or in the manner you describe. Boys would not be arrested for such a proceeding.

Please answer in the next issue of SELF CULTURE the following questions:

1. Who drew up the "Mecklenburg Resolutions," and who introduced them?
2. What is a "Liberty Tree"?
3. Whom did the Continental Congress appoint Major-General under Washington?
4. What three regicide judges took refuge in America?
5. What was Wolfe's favorite poem?

1. The author of the Mecklenburg Resolutions (on which, by the way, historic doubt is cast) is supposed to be Dr. Ephraim Brevard, clerk of the committee, and it is said that the resolutions bear his signature. As soon as they were adopted it is related that they were read from the steps of the courthouse in Charlottetown, and a copy was sent by special messenger to the Congress at Philadelphia.

On June 13, 1775, they were published in the South Carolina Gazette, and a copy was sent to the Earl of Dartmouth, Secretary of State for the Colonies, by Governor Wright, of Georgia, which is said to be still in the State Paper Office, London. The resolutions, however, whether authentic or not, seemed to have entirely passed from memory until the year 1818, when the Raleigh, N. C. Register reproduced them. The original manuscript is said to have been burned in 1800.

2. Your inquiries about the Liberty Tree or Liberty Pole you will find answered in the Inquiry Department of SELF CULTURE, for November of last year, page 171.

3. The immediate successor to Washington in the command of the army was Major-Gen. Knox, afterwards for ten years Secretary of War, though the official appointee was Alexander Hamilton. See the Inquiry Department for March, 1897, page 556.

4. In July, 1660, there arrived at Cambridge, Mass., Edward Whalley, and his son-in-law William Goffe, two of the judges who had been concerned in the condemnation of Charles I. Dixwell, another regicide, also escaped to New England. All of them had to seek refuge after the news reached this country of the passage of an act of Parliament providing for the punishment of all concerned in the execution of Charles.

5. Wolfe's favorite poem, quoted on the eve of the Battle of Quebec, fought on the Heights of Abraham, was Gray's "Elegy Written in a Country Churchyard."

Through the medium of your Question Department, please inform me where the Declaration of Independence was first printed. The text and the facts about its framing and adoption I find in the

Britannica, but not where it was first published.

The Declaration of Independence was first published in full in the Staatsblatt, on July 9, 1776, in German. This journal was published in Philadelphia by Henry Miller, formerly a printer for Benjamin Franklin. Later, when Lord Howe captured Philadelphia, one of his first acts was to confiscate Miller's press.

Please let me know through your interesting pages what was the cause of the late war between China and Japan, and if the latter acquired any territory at its conclusion. In brief, will you also state what was the effect on Europe of the discovery of America?

The cause of the war between China and Japan was Corea, which, in 1876, concluded a treaty with Japan, and one with China six years later. She had also made independent treaties with a number of European Powers. Under these treaties Corea was regarded as an independent State, and by virtue of them, many of her ports were opened to European commerce. This created jealousies between the Japanese and the Chinese, and divided Corea into two factions. In 1894 considerable internal disturbances occurred in Corea. When China sent troops to quell the rising, Japan protested against the violation of the treaty of 1876. This brought the two powers into collision and so caused the war between them.

Formosa is the addition which Japan has gained to her territory in consequence of the war with China.

The effect on Europe of the discovery of America was to enlarge its geographical ideas and give impetus to its commerce and colonization.

R. H. Stoddard, the New York critic, recently affirmed that "the rules to which the art of poetry conforms have been gathered from the practice of the masters, and formulated into a system of critical laws, which not to know is to know nothing of poetry." Please state your opinion of this in SELF CULTURE. In what written form have such rules and laws been expressed?

Let me add that your magazine is a constant delight to me.

Mr. R. H. Stoddard speaks inadvisedly, we think, when he affirms that a man knows nothing of poetry who is ignorant of its rules. We all know persons who are fond of verse and can quote much good poetry appreciatively and discriminatingly, but who know nothing of its technical construction. The fact is, that to know its forms of construction and technique may in some instances dull the ear for its melody and the soul for its sentiment. You will find Gummere's "Handbook of Poetics for Students of English Verse" a good source of information in regard to the subject-matter, style, form and metre of verse. The work is published by Ginn & Co., Publishers, Boston. Price, $1.00. We much appreciate our correspondent's good words for SELF CULTURE.

Please inform me where I can purchase a microscope of sufficient power to discern the minute animal life in a drop of water. What will be the probable cost of such a microscope?

There are no microscopes made by which minute animal life can be detected in a drop of spring water, or ordinary pure drinking water. Chemists have not as yet found living organic matter in anything except in drops of stagnant water, taken from pools. These may be seen by the aid of a good magnifying glass or microscope, which can be purchased for about $6.00. If you will visit your nearest jeweler or dealer in optical instruments, he will show you a catalogue containing illustrative designs of instruments and their prices. These range from $4.50 to $150.00, and may be tested before purchasing. Living organisms in water, not visible to the naked eye, may be seen through a glass which has been adjusted for that purpose. Such a glass need not be very expensive.

Pray oblige a subscriber and member of the H. U. League with some facts relating to Edison, the electrician and inventor.

Thomas Alva Edison, an American inventor, was born in Milan, Ohio, February 11, 1847. His education was limited, though it was supplemented by instruction from his mother and by his own reading. He became particularly interested in the study of chemistry. At the age of twelve, he became a newsboy on the Grand Trunk railroad in Canada, and later printed the "Grand Trunk Herald" in the baggage car of the train on which he sold his wares, disposing of it with his other papers. Becoming interested in telegraphy, he studied it late at nights in a railway station, and soon became an expert operator. He was employed as an operator in several Canadian offices and at Adrian, Mich. At this place he fitted up a small shop for repairing telegraph instruments and the making of new machinery. He then went to Indianapolis, where he invented his automatic repeater.

After brief sojourns at other places, he pro-

ceeded to Cincinnati, with the acquired reputation of a successful inventor. From there he was called to Boston, where he perfected his Duplex telegraph. Not long afterwards, Mr. Edison was made superintendent of the New York Gold Indicator Company, and transferred his shops to Newark, N. J. In 1876, he resigned the latter engagement in order to devote his entire time to research and invention, and for this purpose he located himself permanently at Menlo Park, New Jersey. Mr. Edison's inventions are many and practical, and some are of extraordinary value; among them are the phonograph, improvement in the electric light and the telephone, the microphone, the electric pen, the quadruplex and sextuplex transmitter, and the kinetoscope.

I should feel obliged if you would give me some information respecting the lately discovered gas, Argon.

Argon, a new gaseous constituent in the atmosphere, was recently discovered by Lord Rayleigh and Professor Ramsay, of England. The former had observed that the density of nitrogen varied considerably, according to the source whence it was obtained. Supposing this to be due to a variable amount of some other unknown gas, Lord Rayleigh added to air an excess of oxygen and passed electric sparks through it. The density of the nitrogen gradually increased until it reached 19.8. Professor Ramsay, on the other hand, by removing the oxygen from the air, and passing the nitrogen over heated magnesium, which was thereby converted into nitride, obtained a residual gas, having a density of 20.8. It is more inert than even nitrogen, and exists in air to the amount of one per cent. It exhibits two spectra, according to the strength of the discharge and the degree of the rarefaction of the gas. In one the color is largely orange-red, in the other, under less pressure, it is blue. About 200 lines have been measured. A mixture of pure liquefied oxygen and nitrogen forms a clear liquid, while air in a similar state shows a turbidity which is probably due to the new gas.

Argon may prove to be a mixture of two or more gases, and may even turn out to be only an allotropic form of nitrogen, just as ozone is of oxygen. It is worthy of remark that several experiments of Cavendish, made about a hundred years ago, pointed to the presence in the air of some substance other than the gases with which we are already familiar. Some experiments of Messrs. Ramsay and Berthelot point to the formation of compounds of the gas with carbon and benzene. Small quantities of the gas have been found in some rare minerals and in mineral waters. The National Academy of Sciences of the United States, in April, 1895, awarded the discoverer, Lord Rayleigh, the "Barnard Gold Medal for Meritorious Service to Science." Two prizes, of ten thousand dollars each, one given by the French Academy of Sciences, the other the gift of the Smithsonian Institution, have been awarded to the discoverers of Argon.

Will you please publish in SELF CULTURE some points on the affirmative side of the debate, Resolved: That the people of the United States should vote directly for their President and Senators?

1. The present system of choosing a President by electoral vote is not only involved, but it is superseded, and, as against a direct vote, is not recommended by many advanced authoritative exponents of the Constitution.

2. A leading consideration, when the present method was adopted, was that by this means of election foreign interference would be avoided. At that time the country was at the threshold of national existence and had just entered the family of independent nations amid the throes of war, and foreign interference in matters of government was a general fear. No such fear is thought of now.

3. Other arguments were that the President or his partisans would have less opportunities for using corrupt influences to secure reëlection. That public sentiment would operate more directly in the choice. If these arguments are good for the present system, they are fully as applicable to the system of direct vote; since the most direct expression of the sentiments of the people must be by the people themselves.

4. In its most essential features the system defended by Hamilton and his co-laborers is not only different from the system of to-day, but it is contradictory, and what the system was intended to guard against are those very things which are now done under it.

5. The President and Senators should be chosen by direct vote, because this method is the truest expression of popular will. Under the electoral, the popular vote may be on the side of the defeated candidate.

6. A direct vote is recommended by its practical simplicity. The electoral system, already direct in some of its features without the once apprehended evils, is a complicated piece of machinery. It has been wrested from its original purpose, and stands inoperative in the Constitution of the United States to-day.

7. A direct vote would bind in a closer embrace the various sections of the country. This is much needed in a Republic so vast and progressive as ours, and still growing with phenominal rapidity. The weight of its members and

of its diversified interests is increasing, and it requires, as the condition of stability, a corresponding central authority and cohesive force.

8. Electors are intended to be independent voters, with absolute power over the nomination and election of the President. But the present organization of parties into nominating bodies now controls in advance their action, annuls their private judgment, and reduces the electors to mere ciphers.

9. A direct vote would remove the pressure upon "pivotal" States, with the attendant frauds and excitements. Now the "doubtful" States are singled out and every possible device, fair or foul, is brought into requisition to carry them. A direct vote would diffuse political effort, and scatter the centres of inflammation.

10. It is well for those who value the present system to beware of subjecting it to too great a strain, and we have indicated that the present methods are a very serious strain upon the electoral system.

In your next issue, will you be good enough to tell me some good reasons why so much more attention is given to explorations in the Arctic than in the Antarctic regions?

The following, among others, are reasons why exploration in the Arctic has hitherto been more engaged in than exploration in the Antarctic Ocean:

1. The Antarctic is further removed from the habitable and civilized portions of the globe, whence expeditions have been sent out in the interest of Science.

2. Because there is a notable absence in the region of the South Pole of terrestrial animal life and even vegetation.

3. Since the difficulties of exploration are greater — great as they are in the North Pole region.

On this subject see General A. W. Greely's observations on Antarctica, in the last issue of our "Information Notes," (p. 82, April No.)

Oblige a member of the Home University League and reader of your instructive magazine, with some facts about the New England poetess, Lucy Larcom.

Lucy Larcom, an American poetess, was born at Beverly, Massachusetts, in 1826. When she was twelve years old her father died, and her mother established a factory boarding-house in Lowell. After spending three years at school she became a factory hand in a cotton mill. During that time she contributed to the "Lowell Offering" a series of parables. At the age of twenty she went to Illinois, where for three years she studied in Monticello Female Seminary. On her return to Massachusetts, she was employed for six years in the Norton Female Seminary, and later on taught classes in the Boston schools. An acquaintance with the poet Whittier ripened into friendship which has become famous in literary circles. She was for a time editor of "Our Young Folks," a Boston magazine. Her publications are "Ships in the Mist" (Boston, 1859); "Poems" (1868); "An Idyl of Work" (1875); "Childhood Songs" (1877); "Wild Roses of Cape Ann, and Other Poems" (1880), and "A New England Girlhood" (1889). She died April 15, 1893.

Will you kindly tell me through the columns of "Inquiries Answered" in SELF CULTURE why a national Bank situated within the city limits of Philadelphia should be called the National Bank of Northern Liberties? Where does the expression "Northern Liberties" come from?

The "Northern Liberties," a term used in a local geographical and civic sense, is now a portion of the city of Philadelphia. Until forty-five years ago it was a separate municipality. It is situate north of the original boundary of the city laid out by Penn at Vine Street. The name exactly expresses its character. For many years before consolidation it was federated with the city, but is now an integral part of it. It still retains its gas works, and has a few of its original rights retained. Names of many old corporations and institutions retain its old designation and new ones adopt it because it defines location easily and is well known in Pennsylvania.

Will you please give me a few points on the affirmative side of the question, Resolved: That inter-collegiate football is beneficial, morally and physically?

1. Football has acquired such a hold upon American youth that the question of its merits or demerits as a game must force itself upon everyone's attention. We know that in every position in life which a man can occupy, a fairly well-developed frame is of great advantage to him; that the man who possesses health is able to do better work than his rival who lacks it; that health includes in its very essence the idea of a certain amount of strength, and that to acquire health and strength and the full development on which they depend, exercise is essential. The more varied the exercise and the more it brings into play the mental faculties, the more beneficial it is to the mind and the body reciprocally.

2. The application of these propositions to football seems to us obvious. Athletics, con-

trolled by rigid rules, are now deemed supplementary to a well-devised system of physical education in every university and college. Rowing, as practiced to-day, develops chiefly the muscles of the back and hips; it does little for the front arm and practically nothing for the pectoral muscles. Baseball makes but little demand on the left arm or on the left side of the chest. Cricket and tennis are usually "right-sided" games. None of these is to be compared with football in the direction of bringing all the muscles into action.

3. Whatever physical good can be received from any form of college athletics can be obtained from football, while above all others it tends to develop self-control, coolness, fertility of resource, and promptness of execution in sudden emergencies, involving, at times perhaps, personal danger.

4. A further advantage of football over other forms of college athletics is that it appeals to a much larger proportion of men. Thus, probably not more than fifty men in all take part in the annual training for crews at Pennsylvania; while at football for the past three seasons, what with 'Varsity teams, scrub teams, the various class teams, and the number of voluntary teams made up of students, at least 160 men have played the game, many of them daily. The same is true of Harvard and other universities.

5. It has been said that football is objectionable from the fact that it entails physical danger and that the inflicting of physical injury upon another person has a brutalizing effect. To those who think that an occasional blackened eye, bruise, sprain, or bleeding nose, is a great evil, the game may seem objectionable. But to those who believe that in the life of a boy the occurrence of injuries not severe enough to leave permanent traces is not necessarily an evil, but often a positive good, by encouraging fortitude, manliness, and high spirit, the game is not so objectionable.

6. The question as to the danger of football in our colleges has been answered by statistics. The question of the occurrence of fatal or of permanently disabling injuries to any football player in any of four chief institutions, namely, Princeton, Yale, Harvard, and Pennsylvania, for the ten years prior to 1894, was sent to representatives of the institutions, and the replies after careful investigation were that "no instance of any permanent injury to a player had occurred in all the long series of contests waged during those ten years on the football fields."

7. We do not deny the existence of physical danger, but we believe it possible to minimize it and yet retain all the most useful features of the game. And we also insist that the spectacular character of football and the frequency of sprains, wrenches, and other severe or minor injuries in the presence of multitudes of people have led to unintentional and not unnatural exaggeration of the seriousness of football.

8. The accidents of aquatic sports, of horseback-riding, of shooting and other forms of recreation greatly exceed those of football; statistics prove this.

9. We believe it is better for the American people to cultivate rather than to repress the indulgence in national sport. With unfair and foul features of play suppressed, the game may be practiced on its merits, and the hold which it has secured upon our communities proves that it has value and is the need of the hour. It is not a little thing that an American community shall cease for the moment its worship of the golden calf even if it find no more worthy idol than a football player. A professor in a well-known college has said: "If we were selecting from any college the young men most likely to endure the strains of professional or business life in this country and to score success, we should be disposed to estimate at much more than 2 per cent. the actual working superiority of the football players over their classmates."

The special advantage of inter-collegiate football is that it brings the youth of two institutions into wholesome and healthful rivalry and promotes good fellowship.

Be kind enough to tell me some facts in your next concerning the author, Richard Harding Davis.

Richard Harding Davis, an American editor and writer of short stories, is the son of Rebecca Harding Davis, and was born in Philadelphia, April 18, 1864. He was a student at Lehigh University, and afterwards at Johns Hopkins University, where he received special training for a journalistic career. After several years' service as a reporter upon various Philadelphia newspapers, he became connected, in 1888, with the New York "Evening Sun," in which his first important stories appeared. Two years later, he was appointed managing editor of "Harper's Weekly." He excels in short story and descriptive writing, and has travelled extensively in Europe and South America for incidents and material for the latter. Collections of his stories have been published under the titles "Stories for Boys," and "Gallagher, and Other Stories" (1891); "The Rulers of the Mediterranean" (1893); "Van Bibber and Others;" "The Exiles and Other Stories;" "Our English Cousins" (1894); "About Paris" (1895); "The Princess Aline" (1895); and "Cinderella (1896). His descriptive writ-

ings include "The West from a Car Window;" and "Three Gringoes in Central America." He is a frequent contributor to the current magazines.

Please oblige a subscriber and member of the H. U. League with some account of Smithfield, where the martyrs for the Protestant faith were burned in early times in England.

Smithfield was an open market-place, about six acres in extent, in the heart of London, and in early times was without the city walls, and therefore available for tournaments and jousts, as well as for executions and burnings. Here Wallace, the Scottish patriot, was beheaded by Edward I., and here also Wat Tyler was stabbed by the Mayor of London during the agrarian disturbances in the reign of Richard II. The place was perhaps most notable for the burnings of a long line of martyrs, extending over a period of 200 years, but chiefly during the reign of "Bloody Mary." It is said that there were as many as 280 men of all ranks, including bishops and country gentlemen as well as laborers and citizens, burned or beheaded for holding the reformed faith during the great persecution of 1555–58. If you can get access to Fox's "Book of Martyrs" you will find a harrowing account of the doings of this period. On January 29, 1555, Rogers and Bradford, prebendaries of St. Paul's, Rowland Taylor, the parish priest of Hadleigh, and Hooper, Bishop of Gloucester, were arraigned for not admitting the corporeal presence in the sacrament of the mass. They were condemned to be burned.

Rogers died at the stake at Smithfield on February 4; on the 9th, Hooper suffered in front of his cathedral at Gloucester, and Taylor perished at Hadleigh, amidst the blessings and prayers of his people.

In July, Bradford was burned at Smithfield, and in the next three months from thirty to forty more died by burning, either at Smithfield, or in the near neighboring counties. In October, 1555, Bishops Ridley and Latimer were burned at Oxford. Others who were arraigned saved themselves by recantation. As far as religious persecution was concerned, the reign of Mary was perhaps the darkest period in English history. We who, in the present more enlightened age, are reaping the benefits of the martyrdoms of these past years, can hardly conceive how such cruelties could be committed in the name of a religion, the predominating characteristics of which are love and mercy; but almost every page of history shows us that no sentiment is too sacred for man to distort when worldly advantage is to be gained.

What is the present population of Jerusalem and of Palestine, and what proportion of the population are Jews?

If our correspondent will refer to the article on Palestine, in the Encyclopædia Britannica (pages 177–178 of Vol. XVIII.), he will find some account of the ethnic divisions of Syria, and what is said of the difficulty of estimating the population. Roughly speaking, the population to-day of Palestine may be said to be two and a-half millions, chiefly the descendants of the ancient Syrians (Aramæans), Arabs, and Turks, with a sprinkling of Jews and Europeans. The population of Jerusalem is 40,000. The proportion of Jews in Palestine and the Holy City is small. The total Jewish population in Asia (including Turkey in Asia, Central Asia, Persia and Arabia) is only 166,000. Of this number, 25,000 to 30,000 would represent the Jews in the whole of Palestine.

Would you kindly inform an interested reader what the sources are of England's annual revenue, and, if possible, indicate the sums that make up the national income?

Great Britain's revenue for the year 1895–96 was a little over five hundred million dollars. The chief sources of this revenue are as follows: Customs, 100 million dollars; Excise, 135 millions; Property and Income Tax, 80 millions; Estate and Succession Duties, 60 millions; Post Office, 55 millions; Sale of Stamps, 35 millions; Telegraph Service, 14 millions; Land Tax and House Duty, 12½ millions; Crown Lands and Suez Canal Share receipts, 5 millions; Miscellaneous, 7½ millions. Of this vast total (500 million dollars), 25 per cent. is disbursed in interest on the National debt, sinking fund and terminable annuities; nearly 40 per cent. is expended on the army and navy, and the remaining portion is applied to the maintenance of the different branches of the civil service.

I desire some information on the subject of early French exploration in territorial Wisconsin, and of the visits of Jesuit missionaries to the region.

Early in the seventeenth century French interest in discovery in the West began to manifest itself, and under Fontenac, the able French Governor of New France (Canada), enterprise was stimulated to a high degree. Naturally, wonder was excited as to what sort of country lay west of the Great Lakes, and where these waters would lead to. Traders and *coureurs des bois* had incidentally learned some facts about the region, rich as it then was in fur-bearing animals, the quest of the trader and

those engaged in the profitable peltry trade. Among the earliest of those woodrangers to visit the west was Jean Nicolet, who as early as 1634 is known to have visited Green Bay, Wis., and to have ascended the Fox River. Nicolet, though a trader, was a sincere Catholic, and must have carried his religion with him into the Western wilderness and brought its precepts to the knowledge of the tribes with whom he sojourned, and whose language he had acquired. In 1640, this pioneer of civilization was followed by Fathers Chaumonot and Brebœuf, who reached the Straits of Mackinac. They again were followed, in 1659, by two French traders — Radison and Groseilliers — who ascended the Fox and it is believed descended the Wisconsin River to the Mississippi.

In the year 1660, Father Mesnard visited the west and founded some missions on the southern shores of Lake Michigan, but lost his life soon afterwards in Lake Huron. In 1665, Father Allouez appeared on the scene, and with Father Dablon, another Jesuit missionary, built a mission at La Pointe, and established another at the rapids near the mouth of the Fox, and, learning of the Mississippi, visited it by way of the Wisconsin. In 1673, Father Marquette made his eventful expedition throughout the region of the western lakes and is prominently identified with the missions on the Fox River. A narrative of his enterprise and of his famous trip down the Mississippi, with Louis Joliet, as far as the mouth of the Arkansas, was published in France in 1691. A map in Marquette's book shows his route through Wisconsin to the waters of the Great River. In 1674, Marquette appears to have made a canoe voyage from Green Bay to the site of Chicago, as did La Salle five years later. In 1680, the trader Du Luth made his celebrated expedition to the upper end of Lake Superior, and in 1685 Nicholas Perrot appeared in Wisconsin, and became a noted fur-trader in the region. Permanent white settlement in Wisconsin began about the close of the Revolutionary War.

Pray favor me with an explanation of why it is that as one ascends a high mountain the cold increases.

The decrease of temperature experienced on ascending mountains results from various causes. The greater rarefaction of the air, found as the greater elevation is reached, necessarily diminishes the absorbing power of the air. The temperature of the atmosphere is greatest near the earth because the air transmits the rays of the sun without decomposing them, and cannot therefore be heated by them before reaching the surface of the earth, where they are decomposed and their heat set free. The air receives the principal portion of its heat by radiation from the earth, and the greater the distance from the earth the less must be the power of such heat to warm the air. Another and perhaps the chief reason is that the vapor-screen, which so effectually tempers the climate of this country and prevents the rapid dispersion of the heat from the warm earth, diminishes as we ascend a mountain, and thus allows the heat to be freely radiated into space.

I should like to know what, according to modern science, is the age of the world. Please give me this information in your instructive magazine.

The age of the earth has been variously estimated by scientific men, whose figures, after all, must be allowed to be of the vaguest character. Sir William Thomson (Lord Kelvin), investigating the theory of the earth's having cooled from a fluid to a solid mass, placed the period of such cooling at not less than 200 or more than 400 millions of years, the probability being that 100 million years is the limit of geological history, and that, prior to that time, the earth's surface was unfit for the maintenance of animal or vegetable life. The geologist, Buckland, affirmed that it was millions of years since the world was created, and the only question was, how many millions. Hugh Miller said: "The six thousand years of human history form but a portion of the geological day which is passing over us; they do not extend into the yesterday of our globe, far less touch the myriads of ages spread out beyond." The late Dr. Croll, author of "Climate and Time in Their Geological Relations," considered that the antiquity of the oldest sedimentary rocks is not less than sixty million years; while Dr. Haughton, the lecturer on Physical Geography at Trinity College, Dublin, reasoning from much the same data, fixes the minimum duration at what may be called strata-making time at two hundred million years.

Please tell me who was the Executive of the United States between the years 1787 and 1789.

The United States had no federal administration or executive until March 4, 1789, when the Constitution came into force, though the Continental Congress, on September 9, 1776, resolved "that in all Continental commissions where heretofore the words 'United Colonies' had been used, the style shall be altered for the future to United States." The country was then represented by the several Continental Congresses of which, successively, there were

fourteen in all, the fourteenth and last adjourning 21st October, 1788. The last four Congresses met at New York, and were presided over by Richard H. Lee, of Va. (1785), by John Hancock, of Mass. (1785–86), by Arthur St. Clair, of Penn. (1787), and by Cyrus Griffin, of Va. (1788). These severally may be spoken of as the Executives of the United States for the time being.

Please give me some account of the Pope's insignia — the tiara, cross and ring — with their significance.

The Pope's tiara is a high cylindrical cap of gold cloth, encircled by three coronets, with a mound and cross of gold on the top. The tiara symbolizes the Pontiff's civil or temporal rank, as the keys symbolize his ecclesiastical power. At religious ceremonies the Pope wears the mitre, rather than the triple crown.

The right to wear a crown is said to have been granted to the Bishops of Rome by Constantine the Great, and by Clovis, founder of the French monarchy. The ancient head-dress was a high round cap. In 1053, Pope Damasus II. adopted a cap or mitre more like that of a Jewish high-priest. In 1276, Pope John XIX. (some authorities say Pope Boniface VIII., in 1294) encompassed his mitre with a crown. Benedict XII. added a second, and John XXIII., or more probably Urban V. (1362–70) a third, completing the tiara, to signify the power of the Pope over "the church suffering, militant and triumphant," or, as some say, to indicate his sway over three parts of the world (Europe, Asia and Africa).

The Pontifical staff, or Papal cross, is a Greek cross with three transoms, symbolical (as the three crowns are) of the Pope's threefold sovereignty. The ring is the Papal signet.

I desire to know when the nation first began to celebrate Washington's birthday.

Washington's birthday was celebrated throughout the country in 1790 and thereafter. It was in imitation of the celebration of the King's birthday, and was suggested or at least furthered by the Society of the Cincinnati. Adams' birthday was also celebrated, but less generally than Washington's. Jefferson refused to permit his to be celebrated and the custom ceased, but the death of Washington, in 1799, brought about a reaction from the anti-Federalist opposition to him, and his natal day has been honored ever since.

Would you be good enough to distinguish for me the essential difference between the terms "speculation" and "investment?"

The ostensible difference between speculation and investment, aside from the question of hazard implied in the former, lies in this, that investments usually have something tangible about them and have something to show for the money you embark in them, however much they may depreciate in value. With speculation there is not this element; as hinted, they imply hazard and are, as a rule, much less stable and real than are investments. The two terms denote this. We speak of investments such as in land (real estate), in securities, in an annuity, in life insurance, etc., etc., whereby we look with some degree of confident expectation for profit, income, or future benefit.

Speculations, on the other hand, does not convey a like degree of security or tangibility. There is introduced the element of chance and consequent greater risk. Speculation denotes "investing at a risk of loss on the chance of unusual gain, as in buying and selling, not in the ordinary course of commerce for the continuous marketing of commodities, but to hold in the expectation of selling at a profit upon a change in values or market rates." In the language of the exchange, speculation includes all dealing in futures and options, whether purchases or sales, and so is much more hazardous in its suggestiveness than is the term "investment."

In order to settle a dispute will you kindly advise me in regard to the following: A argues that Baptists are not in the true sense of the word Protestants, for this reason, that they were organized before the Catholics, and therefore there was no reason for their protesting against Catholicism then.

B argues that they *are* Protestants.

A further argues that they are protesters, but not Protestants.

A Baptist minister here informed us that Baptists are not Protestants but are protesters. Now in order to settle this question will you kindly advise me which is the earlier church, the Baptists or the Catholics, and further say whether Baptists are Protestants in the same sense that Methodists, Presbyterians and others are Protestants?

The Baptists came into note as an ecclesiastical organization at the beginning of the 17th century. The first Baptist church was founded in London in the year 1608. The body refuses to acknowledge any great name as the founder

of the sect. Though they are known, as a distinctive church, only from the beginning of the 17th century, they trace their origin to the primitive church itself, and refer to the Acts of the Apostles and Epistles as affording, in their opinion, incontestable evidence that their leading tenets have the sanction of inspiration.

When Christianity became corrupt at the Reformation era, the Baptists were persecuted, and suffered for their faith.

What are called "Particular Baptists" are a secession from the Brownists or Independents. The secession took place in 1633. "Particular Baptists" continue to hold the Calvinistic doctrine of particular redemption, and therefore may be called, essentially, Protestants. They are protesters in the sense that all the Reformed churches were protesters against the corruptions of Rome at the era of the Reformation.

The "General Baptists" are so called because they hold the Arminian doctrine of redemption, instead of the Calvinistic belief that Christ died to save all men, and not only an elect few. Their confession of faith was published in the year 1660.

From what has been said, you will see that Baptists, as an organized ecclesiastical body, had an existence only from the beginning of the 17th century, though, as we have said, they found their claim for the existence of their church upon the practices of the Apostles, but as a church they had no organized existence till the Reformation era.

Pray, is it true that the Mississippi flows up hill? I have been told that the sources of the river are lower than at the outlet.

You are wrong in supposing that the sources of the Mississippi are at a lower level than the current is at its mouth. The fall or slope of the river, in the navigable portion above the mouth of the Ohio, is about six inches per mile, save where, in parts, there are rapids. Below Cairo, the fall at high water ranges from 5¼ to 2¼ inches, and at low water the range is from 4½ inches to ¼ of an inch.

I desire some information explanatory of the terms "the Porte," and "Autonomy," so frequently met with just now in the newspapers in connection with the Eastern Question.

The words you refer to are dictionary words and only incidentally encyclopædic terms. They are, therefore, to be found explained in any lexicon of the language. The "Porte" or "Sublime Porte" (literally, the gate of the palace at which justice was administered) — see article on Constantinople (E. B., Vol. vi, page 304) — is a term used in diplomatic circles which has come to signify the Ottoman Court, or government of the Turkish Empire.

"Autonomy" is a Greek term, meaning "self-government," and used to describe the characteristic of the political condition of ancient Greece, "where every city or town community claimed the right of independent sovereign action." Of late, the term has come to be applied to colonies, provinces or territories, which, while amenable in some matters, as the British Colonies for instance are, to a higher sovereignty, are in themselves self-governing or autonomous. Bulgaria is another instance of an autonomous province, tributary, in this case, to Turkey.

I should like to know if the Pennsylvania towns (Chambersburg, to wit.) ever received compensation from the Federal or State Governments for the losses they sustained by the incursions of Confederate soldiery in 1863.

Pennsylvanians have repeatedly asked Congress for indemnity for General McCausland's raid, but so far without success. These "Border Raid" bills have passed one or other of the two Houses at Washington, but have never become law.

Will you kindly tell me in which of the European nations illiteracy most prevails?

Among the countries of the European continent, illiteracy is most prevalent in the Slavic States of Russia, Servia, and Roumania, the Latin races in Italy, Spain, and Belgium being also very backward in education, while in the purely Teutonic States the percentage of illiterates is merely nominal. In Switzerland, it is 2.5 per cent., in the whole German Empire only 1 per cent., and in Sweden, Denmark, Bavaria, Baden and Würtemberg, there is practically no one who cannot read and write.

NOTE.—In this Department, in the March number of SELF CULTURE, we credited to Rufus Choate the authorship of the phrase "glittering generalities." Since the issue of the magazine, our attention has been called to the fact that there is a prior claimant, in Judge Franklin J. Dickman, of Cleveland, O. Judge Dickman, it seems, himself made use of the phrase in reviewing a lecture by Mr. Choate in Providence, R. I., in the month of December, 1849 — six years before the date of Mr. Choate's "Letter to the Maine Whig Committee." The words used by Judge Dickman, who was chairman at the Lyceum lecture delivered by Mr. Choate, are these: "We fear that the *glittering generalities* of the speaker have left an impression more delightful than permanent."—ED. S. C.

NEW INFORMATION NOTES

Spain, according to the war office statistics, had sent, up to the end of 1896, 198,047 men and 40 generals to Cuba. The deaths in the field and from yellow fever and other diseases were four generals and 22,731 men and officers. No account is given of the men sent home invalided, but at least 22,000 have returned many of whom have since died.

The receipts of the thirty largest postoffices of the country in February were less by $125,019 than in February, 1896. Chicago fell off $39,638. But there were seven among the thirty which showed an increase and these are Hartford, San Francisco, Baltimore, Rochester, New Orleans, Newark, and Richmond. The total receipts of the department for February, 1897, were $2,397,066, and for February, 1896, $2,722,085.

Celebrations of the centenary of the birth of Emperor William I. were general throughout Germany on March 22 and 23. In Lübeck, Altona, Glatz, Erlangen, and Weissenfels foundation stones for monuments were laid with appropriate ceremonies, and in Dortmund, the first stone for an Emperor Frederick monument was laid. In the kingdom of Saxony there was a general celebration, decoration, and illumination, including special services in all churches and public schools. Reports of similar tone come from Würtemberg and from Bavaria. Great municipal celebrations were held in Munich and Stuttgart. The great event of the demonstrations in Berlin was the historic procession from the Brandenburg gate to the national monument. The paraders were 40,000 men and women in costume riding and escorting many floats depicting life and events of the last hundred years.

Another important step in the direction of municipal ownership has been taken in Liverpool, where the corporation has purchased the horses, vehicles and goodwill of the United Tramways and Omnibus company. The price paid was £567,375 on a basis of £12 15s. a share, or about 25 shillings more than recent market quotations. The municipality will operate the whole network of street-car lines and omnibus routes after August, and endeavor to repeat Glasgow's experience in providing a sinking fund out of the profits for the repayment of the purchase fund, and having a good balance to turn into the city treasury. Experiments of this kind, which are successful in every other English city, wherever tried, are impossible in London, because the movement in the direction of unifying the metropolitan government is hopelessly blocked.

The magnitude of the great feat of modern engineering which is contemplated in the proposed Chicago sewage canal may be more fully appreciated by a glance at the latest published estimates of the work required. The canal is to be twenty-eight miles long, and so designed as to allow the waters of Lake Michigan to flow through it at the rate of 10,000 cubic feet a second. This velocity of current is expected to dilute the sewage so thoroughly as to purify the canal stream before it shall reach the cities on the banks of the Illinois river. The width of the alluvial bottom of the canal will be 202 feet, and much of the excavation must be through solid rock. Of this there is estimated to be 12,000,000 cubic yards; of wet soil, 4,500,000 cubic yards, and of alluvial and hard soil, 23,000,000 cubic yards—a grand total of 40,000,000 cubic yards for removal.

"America," says Prof. H. E. Armstrong in *Nature*, "is bound....to develop, and not only on account of the restless energy of her people: her government departments have attached to them many active men engaged in initiating or conducting scientific inquiries; and when the various departments are organized *inter se*, the country will have in its service a highly trained body of scientific experts guiding all branches of public work, and coöperating to minimize the faults of democracy. And universities are arising all over the country, in which German models are being followed, not English. It is safe to predict that, ere many years are past, the United States will suddenly burst into prominence, and probably into predominance, as a nation promoting scientific inquiries of all kinds, so surely is a foundation being laid. Mistakes will frequently be made, perhaps, but they will soon be recognized and remedied in a country instinct with advance."

Dr. Casey A. Wood states, "that every ophthalmologist has noticed that the wearing of veils is productive of weak eyesight, headaches, and sometimes vertigo and nausea. This is due to the strain which is necessarily exerted by one or both eyes in order to see through the obstruction; the irregular figuring of the veil is also a source of annoyance. The weakest eyes suffer most; but where the vision is normal, they are able to bear the extra strain, and thus asthenopic symptoms, traceable directly to the use of the veil, usually escape notice." Dr. Wood states that after a series of experiments, he finds that every kind of veil affects the ability to see, more or less, the most objectionable kind being the dotted veil. The least objectionable one is the one without dots, with large regular meshes made with single compact threads. He adds that one of the worst possible habits is the common custom of reading in public conveyances, churches, theatres, etc., through this unnatural screen.

The report of the council of the Cremation Society of England for 1896 shows that one hundred and thirty-seven cremations were carried out at Woking during the year. There has been a steady increase in the number of cremations each year until 1896, but even in the latter year the number of cremations was greater than in any other previous year except 1895, when there were exactly one hundred and fifty. There are three other crematories in England and Scotland, at which sixty-five bodies were incinerated in 1896.

The Japanese Government has decided to adopt the gold standard and to coin silver at the ratio of 32 to 1. The yen is to be of silver, and no gold piece will be worth less than five yen. The currency consists chiefly of silver at present, but the silver yen will gradually be replaced with gold till gold predominates. There is a hint in this, says an independent Democrat contemporary, for our bimetallists in Japan's pro-

gramme. If they really wish for silver to become again a money metal, in good standing, let them cease to talk about the absolute ratio of 16 to 1 — meaning thereby a financial revolution and debasement of the currency — and propose, as the Japs do, to put 100 cents' worth of silver in a dollar. The sound-money people would look with favor upon that honest sort of bimetallism, though they recognize the fact that bimetallism is mere theory and no law can tie the two metals together at any ratio.

The temperature at the bottom of the ocean is nearly down to freezing point, and sometimes actually below it. There is a total absence of light, as far as sunlight is concerned, and there is an enormous pressure, reckoned at about one ton to the square inch in every 1,000 fathoms, which is 160 times greater than that of the atmosphere we live in. At 2,500 fathoms the pressure is about thirty times more powerful than the steam pressure of a locomotive when drawing a train.

In 1880 the worlds product of copper was 153,959 gross tons and the United States stood third with 25,010 tons, Chili being first with 42,916 tons and Spain second with 36,313 tons. In 1890 the United States was first, taking 116,325 tons out of a total of 269,455 tons, Spain following with 51,700 tons and Chili with 24,250 tons. This lead has been strengthened. In 1896 the United States produced 203,893 tons, Spain and Portugal 53,325 tons and Chili 23,500 tons. Production in other countries has been almost stationary, while that of the United States has gained very rapidly.

The Swiss Government has sanctioned the manufacture and use of weights made of glass. They are of slightly conical shape with rounded bottom edge, and provided on top with a knob to facilitate handling. The designation is moulded into the knob. The glass used for these weights is of special composition, highly refined, and carefully annealed so as to reduce to a minimum the danger of breakage.

M. Levat has recently made a communication to the Paris Academy of Sciences on the tempering of steel in phenol. From comparative trials on the same steels tempered in water and phenol respectively, it has been found that the hardness and electricity in the latter case was much greater than in the former.

Of the total imports of iron and steel into Mexico, England contributes about 30 per cent. principally in rails and railway material, iron tubing, corrugated iron sheets, steel and sheet, hoop and bar iron. About 55 per cent. comes from the United States, and the remainder from Germany and Belgium.

The United States control between 50 and 60 per cent. of the machinery and implement import trade, principally in the departments of mining and agricultural machinery, pumps, tools, steam engines and clocks and watches. England furnishes from 15 to 20 per cent., a not inconsiderable part being industrial machinery. Some English agricultural machinery, notably threshing machines, is also imported, besides some steam engines and pumps. The remainder used in Mexico comes for the most part from France and Germany.

The manna sent to the Israelites on their journey out of Egypt to the Holy Land is regarded as identical with an edible lichen in Kerner and Oliver's "Natural History of Plants," and the older view that it was the sap of a tamarisk, exuded under the influence of a parasite, is held to be without foundation. Mr. M. J. Teesdale reviews the subject in the February number of "Science Gossip," and the evidence he brings forward is opposed to the conclusion to which reference has been made. He shows that an exudation from the twigs of the tamarisk (Tamarin gallica) has more points of resemblance with the manna of the Israelites than either the edible lichen or the sweet gums exuded by leguminous shrubs, such as Alhagi maurorum or A. desertorum — both known to the Arabs as camel's thorn.

A notable patent has been taken out by Geo. Ashford, of Newport (Mon.), which appeals to railway engineers. The improvement is in the method of joining the two ends of rails, either on railways or tramways. Instead of having, as formerly, two fish plates bolted together through the rails, by this patent process the ends of the rails are held securely together by means of a firm shoe, which can be easily and quickly placed in position, and may, in fact, be slipped over the ends of rails whilst a road is being made or repaired, and, without bolting, the rails are firmly held in position. The new arrangement not only maintains the lateral rigidity of the rails but also retains the ends together to prevent them from displacement longitudinally. They have been in use on one of the Welsh railways for some months, and the permanent way men, it is said, never had to put a spanner upon a bolt to tighten them up.

Dr. Oliver, of Newcastle-on-Tyne, England, in a paper on "The Food of the People," gives some interesting statistics concerning the average wage per week of the workmen in various countries, the average cost of his food per week, and the percentage of food-cost to the wage. Thus for Great Britain the figures are for food per week 14s., the wages 31s., and the percentage of food-cost 45. For France the figures respectively are 12s., 21s., and 57. For Germany, 10s., 16s., and 62. For Belgium, 12s. 20s., and 60. In the case of Italy we find the food, wages, and percentage standing at 9s., 15s., and 60 respectively. Spain gives us 10s., 16s., and 62; the United States 16s., 48s., and 33; and Australia 11s., 40s., and 28. Certain other figures are of great interest to all who consider the well-being of the people. The average Englishman, we are told, spends more upon his food than his neighbors. His yearly bill is £9 12s., while the Frenchman's food account is £9 8s. The Italian spends £4 16s., and the German £8 8s. The Spaniard's account amounts to £6 12s., and that of the Russian to £4 12s. We also consume most flesh-meat, but we are the smallest bread-eaters.

Silichromite is a new mineral compound manufactured in France. It is extremely hard, crystallized mass, easy to pulverize, and is used for moulding and polishing. The product is obtained by treating natural chrome ore, sand and coal in an electric furnace. Chromate of iron itself is a mixture of chromite, protoxide of iron and alumniate of magnesia. When to this mineral silica and carbon are added, and the mixture is subjected to the heat of the electric

furnace, there remains in the furnace a molten mass of crystalline structure, in which the silicate of chrome predominates. It will be seen that silichromite is closely related to carbide of silicon or carborundum.

The electric match is the next important invention promised. Before very long the phosphorus-tipped wooden splits now in use will be replaced by a handy little tool that may be carried in the pocket or hung up conveniently for striking a light when wanted. Twentieth century people doubtless will speak of the "hell sticks" of the present day as primitive and absurd, just as we are disposed to look with scorn upon the flint and steel of our forefathers. Already there is on the market a gaslighter which affords more than a suggestion of the electric match of the future, a twist of the handle generating sufficient electricity to accomplish the purpose.

The Kiel canal is lighted over 62 miles by electricity, and is the longest distance in the world lighted continuously in that way.

The largest pin factory in the world is that of Birmingham, England, where 37,000,000 pins are manufactured every work day. All the other pin factories in England together turn out about 19,000,000 pins every day.

The production of pig iron in Sweden last year is estimated at 488,400 tons, as compared with 462,930 tons in 1895, of smelting pieces 185,500 tons as against 186,100 tons, of Bessemer steel 115,300 tons as against 97,295 tons, and of Martin steel 135,300 tons as compared with 96,475 tons.

A report to King Leopold, as Sovereign of the Congo State, by M. van Eetvelde, Secretary of State, says that slavery cannot be directly repressed, but preventive measures have been instituted in the shape of penal legislation, the regulation of labor contracts, the surveillance of caravans, and the efforts made to diminish intestine wars and to put an end to cannibalism and human sacrifices. The State has now 115 stations and 684 agents, while the public force comprises 12,000 men. The number of missionaries — Belgian, English, and American — amounting to 223, is seven times greater than at the outset.

It may be of interest to know what Church in the world is accounted the wealthiest. This recognition is generally assigned to the Orthodox Church of Russia. As an evidence of this, it is stated "that it could easily pay the national debt of the empire, amounting to about £200,000,000, or nearly $1,000,000,000, and yet not be impoverished." This seems almost incredible, but it must be remembered that it has some very lucrative sources of revenue. One of the most profitable is the sale of candles.

Conferences are now in progress in Madrid between the Prime Minister, the Minister for the Colonies, and the Marquis de Apezteguia, representating the constitutional party in Cuba. The views of the Cuban delegate seem to have been received with approval by the Government, and, our Madrid Correspondent says, it is, perhaps, not too hazardous to predict that the outcome of these deliberations will be an almost immediate reform of some of the most crying abuses which form the basis upon which the whole fabric of the discontent of the native Cubans is based. At a Ministerial Council held the other day a project of reforms for Cuba was finally adopted.

Dr. Karl Peters, in a lecture on "The Future of Africa" before the Foreign Press Association, in London, said that there were in Africa a number of cool and healthy high plateaux, where the white man could live in comfort, and where he found all conditions for agricultural and pastoral pursuits just as in his own country. A later generation of colonists would be able to use throughout the entire continent iron for their immediate wants, and in many districts coal required by modern industry. The native population, estimated at about 200 millions, only required to be organized by the whites in order to raise the natural wealth of the continent. A sound connexion of justice with proper severity towards the blacks was the correct principle to act upon. Africa required railways and highways in every part. Rinderpest must be exterminated. The whole African question was the question of communication.

Dr. Robert Bell, of the Canadian Survey, has been describing an exploring excursion he had undertaken during the past two summers into the almost unknown region directly southeast of Hudson Bay and east of the Noddawai River. He discovered a new river which eventually found its way into Hudson Bay. This river had remained unknown although within 200 miles of Ottawa. The whole region of his explorations might be called a plateau broken by isolated hill ridges. The climate was suitable for all ordinary crops. The soil was a rich brown clay. There was some large game in the region, which was entirely unsettled. There were no Eskimo. The country possessed an almost inexhaustible supply of timber, red and white pine, as well as spruce.

Recent reports of low costs of southern pig iron production have led some northerners interested in pig iron to see what they can do in that line. It is said (although no names are given) that some gentlemen practically engaged in iron manufacture have declared that pig iron can be made in the Hanging Rock region on the present basis of prices at $5 per ton. The locality mentioned was within the borders of Lawrence County, O., between Washington and Olive furnaces. The reason given for this opinion is that the fuel, ore, and limestones are there in close proximity to one another, and it is held that a modern furnace erected in that locality would be able to run continuously, and meet almost any price.

There is at present in the keeping of a London jeweller a Ceylon sapphire which is not less remarkable for its size than for its translucency and the brilliance of the optical effects it can show. The weight of the gem is 638 carats, and it is of a dark milky-blue color, perfectly transparent and flawless. Larger sapphires have been known, but they have usually, if not always, been dull and muddy instead of having the clear, translucent color of this specimen. But, in addition, it possesses a property occasionally found in slightly cloudy or milky Ceylon sapphires — and sometimes in other gems, too — which greatly enhances its value in the eyes of believers in the occult powers of precious stones to confer health and good fortune on their wearers.

THE WORLD OF THOUGHT:

ABOUT BOOKS AND THEIR AUTHORS

The kindness of a friend who knew we would be interested in his work, has brought to our library table a volume entitled "A Young Scholar's Letters," written by an American youth during some years of student life in the Old World. The youth, by name Byron Caldwell Smith, was a devotee of the intellectual life, athirst for knowledge, yet having great resources within himself, a beautiful, aspiring, and almost daring spirit — a pantheist he was so far as creed was concerned — whose future seemed to be full of promise, but, alas! was too early cut short by the grim and ruthless Conqueror. The Letters, which remind one of the famous *Journal Intime* of Amiel, or perhaps more closely, of the recent diary, "The Melancholy of Stephen Allard," are sympathetically edited by Dr. D. O. Kellogg, who knew intimately the author of them, and in the latter's brief working years, before his lamented death, was actively associated with him in University work. Very attractive, yet manifestly truthful, is the editor's sketch-portrait of the writer of the Letters, though this was hardly needed, since the Letters themselves, while all-unconsciously penned, and "unsuspicious that strange eyes would ever behold them," form the truest and most veracious of pictures, and without any concealments.

The Letters are successively dated, between the years 1868 and 1872, from Heidelberg, Berlin, Munich, and Vienna, with a few from Athens, whither the young student had gone to satisfy his hunger for art in the presence of the remains of Greek civilization. The epistles are addressed chiefly to his parents, then resident in Illinois, for from an institution in that State the youth at the age of nineteen had graduated. They present their author in an alluring light, with the beautiful enthusiasms of youth upon him, thinking for himself in the wider world he had just entered, communing on many things, and at times delivering mature and thoughtful literary and social judgments. From creeds he appears to have early emancipated himself, taking up an attitude we are told towards Christianity such as he assumed towards Paganism or Buddhism, as one who feels, as Tennyson expresses it, "the vanities of after and before." If his views on the deep problem of life appear now and then those that belong to immaturity, it must be said that they are always lucidly presented, and with much intellectual acumen. In his eager, independent, resourceful mind there is no irreverence. The Divine he found in Nature, and Nature he worshipped with his whole soul. Nature was to him, as the editor phrases it, a revelation of the Absolute. "He recognized no personal immortality, and thought it made self of extravagant importance, setting it in opposition to the Divine whole, and making love a passion rather than a principle. Death was to him a dreamless repose, a blessed Nirvana."

This negation of belief appears to have brought with it no spiritual conflicts. Doubt seems to have been a natural development, a necessary phase of his craving to understand things. Even when the end came there was, apparently, no struggle of the soul, a mother's love and tender care satisfying all solicitudes, and lulling both the physical and spiritual nature to sleep.

* * *

Hardly could a more useful service be rendered as an aid to the literary life than that which has recently engaged the publishing section of the American Library Association, in the issue of their Annotated Lists of Reading for the Young, Lists of Books of approved value suggested for Girls and Women and Their Clubs, and notably in the Bibliography of Fine Arts and Music, which has just appeared under the intelligent editorship of Mr. George Iles, of New York. We are constantly asked for suggestions of the kind which these issues of the American Library Association meet — the naming of the best books suitable for private Library and Reading Clubs in the various departments of Literature and Science. To the "List of Books for Girls and Women and Their Clubs" (The Library Bureau, Publishers, Boston, New York, Chicago, St. Louis, Philadelphia, and Washington, [Price 50c in paper; $1.00 in cloth]) the writer of this has contributed the department of Literature, embracing a selection of the best English and American authors in Poetry, and Belles-lettres, with brief critical estimates, and notes on the accepted editions. For the same work competent critics have dealt with History, with Education, including the Sciences, with the Useful Arts, with Fiction, and with Fine Arts and Music. The publication of such a work, as a key to the treasures of literature, must be of prime importance to readers, as well as collectors, of books, who want to add to their libraries only works of real merit and enduring value. The student of books, especially, will find the Annotated Lists most suggestive and useful in guiding him to a choice in adding to his store of intellectual treasure.

In the æsthetic sphere, most valuable will be

found the new volume, the "Annotated Bibliography of Fine Arts," including Painting, Sculpture, Architecture, Arts of Decoration and Illustration, together with "Music," embracing general and special histories of the art; works on ancient, mediæval and modern music; on folk-song and national music; on musical criticism and analysis, and on the biographies of the great composers. The volume has been prepared by two specialists, Mr. Russell Sturgis, the eminent architect, who deals with the Fine Arts, and Mr. Henry E. Krehbiel, musical critic of the New York Tribune, who deals with Music. The work of these experts is exceptionally well done, and will be of the highest service to all who desire an appraisement by experienced critics of the important works in the departments of Music and the Fine Arts.

The expiry of copyright protection in England for the works of the mid-century authors is year by year enabling the popular publishers to put upon the London book-market cheap editions of these authors' works. To the student, and the masses who can ill afford high-priced editions of the modern English classics, the boon is a great and highly appreciated one. One of the latter-day authors whose copyrights are now lapsing, is the late Matthew Arnold, of whose poems a friend in London sent us the other day a penny (two cent) edition; while editions of his earlier essays and miscellaneous prose works are now to be had for three pence and six pence (6¼ and 12½ cents). What Arnold, had he lived, would have said to the appearing of these cheap reprints, it would be curious to speculate upon, since his writings, while full of epithets hurled at middle-class Philistinism, for its woodenness and lack of lucidity, were almost too intellectual for the class he himself moved among. Not unlikely his proud soul would have scorned the circulation of his work among those whom he deemed far removed from "sweetness and light," and yet he might have derived consolation from the hope that, as his barbaric countrymen were at length taking to his books with avidity, there might be salvation in this world for them through "culture."

For a man, like Arnold, who was always on excellent terms with himself, it would have been as gall and wormwood to find the middle-class publisher pounce upon his books as soon as the law permitted him, and reprint them for a penny for the benefit of his own pocket, and incidentally, for the behoof of the masses. Yet the composure of soul, which he ever commended in others, would surely have shown itself in his own case, and he would have accepted with resignation, if not rejoicing, the increased fame which must come to his memory through the popularizing of his works. More than this, we incline to think he would have rejoiced, for, scholar and aristocrat as he was, he discerned the fact, as we know it in politics, that aristocracy is unfavorable to ideas, and in one of his remarkable papers — *vide* "Irish Essays" — he has told us (speaking of the English) that "inequality materializes our upper classes, vulgarizes our middle classes, and brutalizes our lower classes." Possibly, therefore, so far from resenting the circumstances that his works should circulate even in Houndsditch, he would have been glad to find them doing missionary duty there, and among all resorts, however humble, of his Philistine countrymen.

Aside, however, from the matter with which we have been dealing, it would be worth while for us all to know more of Matthew Arnold. True, as a writer and the censor of his age, he had his conceits and his vanities, and there was not a little about him that savored of intellectual coxcombry. But with all that, he was an inspiring and stimulating force, awaking the age out of its insufferable common-place ideas and respectable dullness. The English middle class, he affirmed, had a "defective type of religion, a narrow range of intellect and knowledge, a stinted sense of beauty, and a low type of manners." Are we in this country less chargeable in these respects, and have we nothing to learn from the jibes and scornings of this high priest of culture, whom we deem too finicky and dilettante for our prosaic and materialistic Western world? Must we also be found among the Philistines — scorning culture and scholarship, making light of rare gifts and high ideas, and remaining indifferent for all time to that depth and breadth of intellectual attainments that makes for the true equipment of the all-round, perfect man?

A new volume, on Canadian history, has been added to the Messrs. Putnam's excellent series, "The Story of the Nations." The work is from the pen of Dr. J. G. Bourinot, of Ottawa, a well-known authority on the Canadian Constitution and a versatile and well informed writer. The story is interestingly told, from the dawn of discovery in Canada, through the dramatic era of French occupation to the conquest, and after the country came under Britain's flag, through the formative period of colonial settlement and progress in self-government down to the era of confederation and the practical status of a quasi-independent nation. Considering the difficulties in the way of writing a coherent narrative of the founding and development, through its successive provincial stages, of what is now the Canadian Dominion, Dr. Bourniot has done his work with notable success and given students of national annals an instructive and highly readable history. The work is attractively produced and is helpfully illustrated. G. M. A.

STORIES AND STUDIES FOR YOUTH:

STEADINESS UNDER FIRE

THE famous war correspondent, Archibald Forbes, published some time ago an interesting article on the discipline of the soldier under fire in battle. It is valuable as calling attention to the defects of the modern system of military training, which inculcates the principle of "cover at all risks." We make the following extract from the article in the interest of our young readers, whose youthful ardor inclines them if not to the profession of arms, to the studious reading of battle-narratives.

Fire-Discipline

The compound which I have taken as the title for this paper is the German expression for that conduct of the soldier under the stress of actual battle which is expected from him as the crowning result of assiduous moral and professional training. It is fire-discipline that is the grand test of true soldierhood, not dapper marching on the parade, not smartness in picking up dressing, not ramrod-like setting up, polished buttons, and spotless accoutrements. These all have their value, not, however, as results, but as contributories; they are among the means that help to the all-important end, that, when the bullets are humming and the shells are crashing, the soldier shall be a composed, alert, disciplined unit of a mighty whole whose purpose is victory. The soldier of the great Frederick's era was a machine. Moltke's man was trained with this distinction between his predecessor and himself, that he should be a machine endowed with, and expected to exercise, the faculty of intelligence. But his intelligence must help toward, not interfere with, that discipline which must be to him a second nature.

My own belief, founded on some experience of divers nationalities in war time, is that most men are naturally cowards. I have the firmest conviction that in cold blood the mass of us would prefer the air quiet rather than whistling with bullets. Most men display bravery because in the presence of their comrades and of the danger they are too great cowards to evince poltroonery. Thus the average man made a capital soldier in the old shoulder-to-shoulder days. British yokels, British jail-birds, German handicraftsmen, German bauers, French peasants, and French artisans, were all pretty much alike and made creditable "cannon-fodder." They would all march into fire and thole its sting, each man's right and left comrade re-acting on him, and his rear file supporting at once and blocking him. In the fire the national idiosyncrasies developed themselves. The "funk" zone, so to speak, had been traversed, and the Briton marched on steadfastly, the German advanced with slower step, the Russian stood still doggedly, and the Frenchman spurted into a run with a yell. When the blood began to flow and the struck men went down, the passion of the battle became the all-absorbing question. And so, whether by greater or lesser steadfastness, or greater or lesser dash, the battle was won or lost. Till the culminating point, no man was ever thrown wholly upon his own individuality, or ever lost the consciousness of public opinion as represented by his comrades.

"Shoulder to shoulder" is dead, and its influences have died with it, but in the new days of the "swarm attack" human nature remains unchanged. The soldier of to-day has to wrestle with or respond to his own individuality; public opinion is separated from him by an interval of several paces. He is tried by a much higher test than in the old close-formation days. And I know, because I have seen, that he often fails in the higher *morale* which his wider scope of individuality exacts of him if he is to be efficient. Herein lies the weak point of the new method of fighting. Cover is enforced, and while physical contact is lost, the moral touch is impaired. The officer gives the forward signal, but the consequences of not obeying it do not come home with so swift vividness to the reluctant individual man. He is behind cover, having obeyed the imperative instructions of his drill master. How dear is that cover, he thinks, and what a fiendish air torture that is into which he must uprear himself!

The German military authorities understand their people, and they know the process which men undergo in being

inured to war. Therefore it is that they do not enforce resort to "cover" with so much solicitude as I have noticed British officers do. They know that in every company there are men who will "lie" if allowed too great independence of individual action; and "cover at all risks" impairs every link in the chain of supervision. Again, they know that it is good for soldiers to die a little occasionally. The dead, of course, are "out of it"; but then death encourages the others. It seems brutal to write in this tone, but is not war all brutal? And it is the solid truth. It may be written down as an axiom that fire-discipline unaccompanied with casualties is weak. I remember standing with a German general before Metz watching a skirmish. The German battalion engaged happened to consist chiefly of young soldiers, and they were not very steady. The old general shrugged his shoulders and observed, "Dey vant to be a little shooted; dey vill do better next time." All young soldiers want to be a "little shooted"; and it is only by exposing them somewhat, instead of coddling them forever behind cover, as if cover, not victory, were the aim of the day's work, that this experience can befall them. All soldiers are the better of being "blooded"; they never attain purposeful coolness till they have acquired a personal familiarity with blood and death.

The British catastrophe at Isandlwana was due partly to the error of employing loose formation against great masses of bold men, whom a biting fire would deter no whit from advancing; but, in the end, from the scared inability to redeem this error by a rapid, purposeful resort to close formation in square or squares. Once the loose fringe of men dodging for cover was impinged on, all was over save the massacre. The test of fire-discipline failed whenever the strain on it became severe. The men had worked up to their skirmishing lessons to the best of their ability; when masterful men brushed aside the result of those lessons, there was no moral stamina to fall back upon, no consuetude of resource to be as a second nature. A resolute square formed round an ammunition wagon might have made a defense that would have lasted at least until Lord Chelmsford came back from his straggling excursion; but no man who saw how the dead lay on that ghastly field could persuade himself into the belief that there had been any attempt at a rally. The only fragment of good that came out of the Isandlwana catastrophe was the resolution, in any and every subsequent encounter, to show the Zulus a solid front; and the retrospect of Isandlwana infused a melancholy into the success of Ulundi, where the most furious onslaughts recoiled from the firm face of the British square.

The Majuba Hill affair was simply a worse copy of Isandlwana. There was no methodised fire-discipline. It has been urged as the lesson of Majuba Hill that the British soldier should have more careful instruction in marksmanship. Probably enough, that would do him good — it could not do him harm — but it was not because he was a bad marksman that Majuba Hill was so discreditable a reverse. It was because he is so much a creature of cover and of dodging that he went all abroad when he saw a real live enemy standing up in front of him at point-blank range. It may be contended that there were fire-seasoned soldiers who participated in this unfortunate business. Yes; but these, with no stronger *morale* to begin with, because of their early training in assiduous "cover" tactics, had suffered in what *morale* they might have possessed because of previous reverses.

One regiment was represented on that fatal hill-top which had not participated in those reverses, and was indeed fresh from successes in Afghanistan. But Afghan fighting is a poor school in which to acquire prompt, serene self-command when, in old Havelock's phrase, the color of the enemy's moustaches is visible. It was only once, or at most twice, when the Afghan did not play the dodging game. He does not care to look his enemy full in the face, and he tries all he knows to prevent his enemy from having the opportunity to look him in the face. Fire-discipline of an alert yet sustained character was not to be learned among the rocks and stones of Afghanistan. When the adventurous Boer breasted the crest of the Majuba he and the British soldier confronted each other at close quarters. It was no time for long-range shooting, it was simply the time for fire-discipline of the readiest practical order to make its effect felt. I imagine Briton and Boer staring one at

the other in a perturbed moment of mutual disquietude. Who should the sooner pull himself together and take action on returning presence of mind? The Boer had the better nerve; to use the American expression, he was quicker on the draw. And then, for lack of fire-discipline, for want of training to be cool, and to keep their heads within close view of a hostile muzzle, the British went to pieces in uncontrollable scare, and the sad issue was swift to be consummated.

Tel-el-Kebir furnishes an incidental illustration of our shortcoming in fire-discipline, which, as I contend, has its main cause in the effects of too stringent urgency to cover. Wolseley showed that discernment, which is one of his most valuable characteristics, in refraining from submitting his soldiers to the strain of a "swarm attack" up to the Egyptian position in fair daylight; and in choosing instead, as a minor risk, a night advance, spite of all its contingencies of hazard, with the hoped-for culmination of a surprise at daybreak. The issue proved his wisdom; and an episode of that issue, set forth with soldierly frankness by Sir Edward Hamley, must have given him a thrill of relief that he had conserved the spirit of his troops for the final dash, without exposing them to a previous ordeal of fire. That dash made, while yet the gloom of the dying night lay on the sand, General Hamley tells us, was 150 yards long, and it cost the brigade that carried it out 200 casualties ere the Egyptian entrenchment was crowned. It was done with the first impulse; no check was let stop the onward impetus of the *élan;* fire-discipline was not called into exercise at all. The whole of the first line pressed on into the interior of the enemy's position. The second line followed, but Hamley, with a wise prescience, "stopped the parts of it that were nearest to him as they came up, wishing to keep a support in hand which would be more readily available than such as the brigade in rear could supply."

It was well he did this thing; but for his doing of it, the shadow of a far other issue to Tel-el-Kebir lies athwart the following quotation: "The light was increasing every moment; our own men had begun to shoot immediately after entering the entrenched position, and aim could now be taken. The fight was at its hottest, and how it might end was still doubtful, for many of our advanced troops had recoiled even to the edge of the entrenchment" (beyond which they had penetrated 200 or 300 yards into the interior); "but there I was able to stop them, and reinforcing them with the small body I had kept in hand (that had remained, I think, in the ditch) I sent in altogether, and henceforth they maintained their ground." They recoiled, and they recoiled by reason of their weakness in fire-discipline. It is a fair query — How severe was the strain?

As regards its duration, but a few moments' fighting sufficed to bring about the recoil; that is made clear by the circumstance that the supporting brigade, following close as it did, was yet not up in time to redress the dangerous situation. In regard to its severity, General Hamley permits himself to use language of the most vivid character. "A hotter fire it is impossible to imagine." The brigade was "enclosed in a triangle of fire." "The enemy's breech-loaders were good, his ammunition abundant, and the air was a hurricane of bullets, through which shells from the valley tore their way." "The whole area was swept by a storm of bullets."

Stronger words could not have been used by an enthusiastic war correspondent gushing his level best about his first skirmish; General Hamley's expressions are fuller-volumed than those used by the compilers of the German staff chronicle in describing that Titanic paroxysm, the climax of Gravelotte. What stupendous damage, then, did this hottest of all hot fires, this hurricane of bullets, effect? The casualties of the whole division reached a total of 258 killed and wounded. Of these "nearly 200," General Hamley distinctly states, occurred exclusively in the first brigade in the rush up to the entrenchment. If we assume that the second brigade had no losses at all, and that the whole balance of casualties occurred to the first brigade when in "the triangle of fire," the fall of some sixty men out of 2,800 was hardly a loss to justify the "recoil even to the edge of the entrenchment" of troops possessed even of a moderate amount of fire-discipline.

Hamley explains that but for the darkness and the too high aim of the enemy, "the losses would have been tremendous." In other words, if an actual loss of two per cent., and the turmoil of the hottest fire imaginable, yet fortunately aimed over their heads, caused the troops "to recoil even to the edge of the entrenchment," the "tremendous losses" that a better-aimed fire would have produced, it seems pretty evident, would have caused them to "recoil" so much farther that Tel-el-Kebir would have been a defeat instead of a victory. The Egyptians did not shoot straight because they were flurried, that is, were deficient in fire-discipline; the

British "recoiled" after a very brief experience of a devilish but comparatively harmless battle-din, because the ardor of the first rush having died out of them, fire-discipline was not strong enough in them to keep them braced to hold the ground the rush had won them. It was fortunate that in Hamley they had a chief who had prescience of their feebleness of constancy, and had taken measures to remedy its evil effects.

During the afternoon and evening of August 18th, 1870, six regiments of the Prussian guard corps made repeated and ultimately successful efforts to storm the French position of St. Privat. What that position was like the following authentic description sets forth: "In front of St. Privat were several parallel walls of knee-high masonry and shelter trenches. Those lines, successively commanding each other, were filled with compact rows of skirmishers, and in their rear upon the commanding height lay like a natural bastion, and girt by an almost continuous wall, the town-like village, the stone houses of which were occupied up to the roofs." There was no shelter on the three-quarters of a mile of smooth natural glacis, over which the regiments moved steadfastly to the attack; every fold of it was searched by the dominant musketry fire. They tried and failed, but they kept on trying till they succeeded. And what did the success cost them? The six regiments (each three battalions strong) numbered roughly 18,000 men; of these 6,000 had gone down before Canrobert quitted his grip of the "town-like village." One-third of their whole number! It was the cost of this sacrifice that caused the Germans to adopt the unprecedented step of altering their attacking tactics in the middle of the campaign. But the change was not made because the troops had proved unequal to the task set them, but because the cost of the accomplishment of that task, in the face of the Chassepot fire, had been so terrible. Now I am not concerned to exalt the horn of the Prussian fighting men at the cost of the British soldier. I will assume, and there is precedent in favor of the assumption, that the British soldier of the pre-dodging era could take his punishment and come through it victoriously as stoutly as any German.

Of the 10,000 British fellows whom Wellington sent at Badajos, 3,000 were down before the torn old rag waved over the place. Ligonier's column was 14,000 strong when the Duke of Cumberland gave it the word to make that astounding march through the chance gap, a bare 900 paces wide, between the cannon before the village of Vezon and those in the Redoubt d'Eu, right into and behind the heart of the French centre on the bloody day of Fontenoy. There is some doubt whether those quixotic courtesies passed between Lord Charles Hay and the Count d'Auteroche, but there is no doubt whatever that when the column, thwarted of the reward of valor by deficiency of support, had sturdily marched back through the appalling cross-fire in the cramped hollow-way, and had methodically fronted into its old position, it was found that at least 4,000 out of the 14,000 had been shot down. Carlyle, indeed, makes the loss much heavier.

Yet a more notable example of the British soldier's gluttony for punishment is furnished in the statistics of the Inkermann losses. The total force that kept Mount Inkermann against the Russians amounted to 7,464 officers and men. Of these, when the long fierce day was done, no fewer than 2,487 had fallen, just one-third of the whole number. The manner in which our soldiers successfully contested their fearful odds in this battle is a phenomenal example of fire-discipline of the grand old dogged type. It is but one, however, of the many proofs that the world has no stauncher fighting man than is the British soldier intrinsically.

Than "annihilation" there is no more favorite word with the critics of manœuvres and sham-fights. In truth it is as hard a thing to "annihilate" a body of troops as it is to kill a scandal. In a literal sense there is scarcely a record of such a catastrophe; if used in a figurative sense to signify a loss so great as to put the force suffering it *hors de combat*, there is amazing testimony to the quantity of "annihilation" good troops have accepted without any such hapless result. Here are instances taken almost at random. The Confederates, out of 68,000 men engaged at Gettysburg, lost 18,000, but Meade held his hand from interfering with their orderly retreat. Of that battle the climax was the assault of Pickett's division, "the flower of Virginia," against Webb's front on the left of Cemetery Hill. Before the heroic Armitage called for the "cold steel" and carried Gibbon's battery with a rush, the division had met with a variety of experiences during its mile-and-a-half advançe over the smooth ground up to the crest. "When it first came into sight it had been plied with solid shot; then half-way across it had been vigorously shelled, and the double canisters had been reserved for its nearer approach. An enfilading fire tore through its ranks; the musketry blazed forth against it with deadly effect."

This is the evidence of an eye-witness on the opposite side, who adds, "but it came on magnificently." Yes, it came on to cold steel and clubbed muskets, and, after a desperate struggle, it went back foiled, to the accompaniments which had marked its advance. But heavy as were its losses, it was not "annihilated." Pickett's division survived to be once and again a thorn in the Federal side before the final day of fate came to it at Appomattox Court House. In the September attack on Plevna, of 74,000 Russo-Roumanian infantry engaged, the losses reached 18,000. Skobeleff commanded 18,000 men, and at the end of his two days' desperate fighting, not 10,000 of these were left standing. But there was no annihilation, either literally or conventionally, if one may use the term. The survivors who had fought on the 11th and 12th September were ready at the word to go in again on the 13th; and how they marched across the Balkans later is one of the marvels of modern military history.

Those examples of stoicism, of fire-discipline strained to a terrible tension, but not breaking under the strain, were exhibited by soldiers who did not carry into practice the tactics of non-exposure. The Russo-Turkish war, it is true, was within the "cover" era, but the Russians in this respect, as in a good many others — such, for instance, as in their lack of a propensity to "recoil" — were behind the times.

THE SCIENCE OF FAMILIAR THINGS:

FORCE AND MOTION — MECHANICAL HEAT, ETC.

AN you not give us a series of short articles on such subjects as the Laws of Motion, Mechanics, Hydrostatics, Sound, Heat, etc., simply worded and illustrated by experiments easy to repeat, which, while dealing with matters of every-day interest, will really form an elementary course in the physical sciences?" It is in response to this inquiry by the Editor of SELF CULTURE that the present series of papers has been prepared.

Introductory

One of the most familiar of the facts of common observation is that a stone raised from the ground and left without support will fall. It is one of those things which we have learned without instruction, without effort, simply because we could not help learning them if we would. It is one of those things which, because of their very commonness, we have come to look upon as matters of course, and which we seldom regard as in any way mysterious. We know, too, that the farther the stone falls the greater is the force with which it strikes the ground, and that a large stone falls with greater force than a small stone. It may be added, although this is going outside of personal experience, that probably no reader of this being asked the question, Why does the stone fall, would not answer promptly: Because the earth attracts it, or pulls it down. This is about the extent of the knowledge which the most of us have of falling bodies, and, though not very exact, it is sufficient for all ordinary occasions.

But suppose that we are inquisitive; is there not something more to be learned about the falling of this stone? We have noticed that as it falls the speed increases; let us see if we can find out whether there is any regularity about this increase. We will drop the stone from different heights and measure the distance through which it falls in a given time, say in one second. We will see, too, if in any way we can establish a connection between the speed with which it falls and the force with which it strikes the ground. To investigate these and other matters which will suggest themselves, we must resort to certain devices by means of which we can make measurements — can measure distances, time and the force of blows. When we do this we are *experimenting;* we are resorting to a means of gaining information which is quite unknown to the ordinary observer, who never asks Nature to put herself to any inconvenience on his account, but takes things as she presents them to him.

Here we have the broad distinction between that common, ordinary knowledge which every one of us has gathered respecting Nature, by no especial effort, but simply because it has been forced upon us, and science, which is knowledge that has been sought after purposely and in every way that ingenuity could suggest. The facts which have thus been slowly brought to light,— that is, by patient investigation and cautious reasoning,— make up the physical, or natural sciences. Though they began with such familiar matters as the falling of bodies, the burning of wood and coal, the freezing of water—with things terrestrial—they now reach out into space and grapple with the most distant worlds. No one can hope to master all the multifarious details of these sciences, embodying as they now do the results of the researches and the best thought of generations of workers; but any one who will can familiarize himself with the leading truths and the fundamental principles of them all. There is no simpler and surer, nor any more agreeable, method of acquiring knowledge of this sort than to go directly down to the bottom facts and investigate for one's self. This is what we purpose to do in these short studies.

Force, Motion

Before we take up the subject of falling bodies it will be best to take a general survey of Force and Motion. By far the greater number of the objects that surround us are in a state of rest. They maintain unchanged their positions both with respect to one another and to us. Rest seems to us, indeed, to be the natural state for a body to be in, and whenever an object — or a body, to use a preferable term — is seen to be in motion, we con-

ceive that it has been disturbed, has been forcibly set to moving. The clouds move. Why? Because the wind impels them. The tree-tops wave to and fro for the same reason. A baseball is seen flying through the air, and we are perfectly sure that either it has been thrown or has been batted by some person, even though we may not have seen the act performed. So unvarying is our experience in this regard that we hold the fact to be beyond the possibility of question that an inanimate body cannot move itself, but is only moved when acted upon by some force outside of itself, and the physicist sustains us in this belief.

Before a body can move, then, force must be applied to it; it is powerless to move itself. Let us be quite sure that there is no mistake about this matter; for if a body cannot put itself in motion from a state of rest, there follows a consequence which we find it difficult to conceive, and yet which follows of necessity, that *a moving body is powerless to stop its own motion.* Once set to moving it must move forever, unless stopped by some opposing force. Here is a very important principle of mechanics, yet one which we find it difficult to assent to, since it seems to be contrary to experience. In all our experience a moving body comes to a state of rest, sooner or later, after the impelling force has ceased to act. Shut off the steam from a locomotive, and the moving train comes to a standstill. The flying baseball comes to the ground and stops. The tree-tops cease to wave as soon as the wind goes down. But if we reflect we shall see that none of these cases is an instance of self-stoppage.

Friction has stopped the train; gravity has drawn the ball down to the ground; and the rigidity of the boughs of the tree has stopped their waving. In fact, it is impossible to have motion in any body upon the earth's surface under circumstances such that there shall not be some opposing force to be overcome, which will stop the motion soon after the motive force has ceased to act. To find examples of perpetual motion we must look to the heavenly bodies. The moon has been circling round the earth for ages, because at some unknown epoch in the past she was set into motion by some force, whatever it may have been, and has never been able to throw the motion off. It is not the earth's attraction which keeps the moon moving; this attraction merely binds the moon to the earth as a satellite. Were it to cease, the moon would still move, though no longer as an attendant of the earth. Again, the earth rotates on its axis, though the force or forces which set it to rotating ceased to act millions of years ago, and it will continue to turn on its axis to the end of time unless its rotation is stopped by some force outside of itself.

We are now prepared to give full assent to the first of Newton's three Laws of Motion which is this:

A body at rest remains at rest, and a body in motion continues to move with constant speed in a straight line, unless acted upon by some external unbalanced force.

The expression "unbalanced force" requires explanation. A body may be acted upon at the same time by two or more forces, which may be so applied as partially or wholly to balance one another. Let a body be pulled in opposite directions by two equal forces and the body will remain at rest; but let one of the forces be stronger than the other, and the body will move in the direction of the stronger pull.

Motion in any body is evidence, then, either that it has at some time been acted on by some force, which may have ceased to act, as when a ball has been struck with a bat, or that some force is still acting upon it, as is the case with a moving railway train. If the body is large and is moving rapidly, our common experience teaches us that the force which set it in motion is great; if the body is large and moves only slowly, we decide that the force, though great, is less than in the first instance. If the body is small, we likewise judge of the intensity of the force from the speed with which it moves. Our judgment in these cases, though correct, is only a rough one. The physicist, and the practical engineer or mechanic as well, aim to make exact measurements, and to facilitate the doing of this they make use of certain terms to express with precision the quantities they have to measure, as follows:—

Velocity By the velocity of a moving body is meant the distance which it moves in a given time, which is always a unit of time, as *one* second, *one* minute, *one* hour. Thus, the velocity of a rifle ball may be 1,200

feet a second; that of a railway train may be given as 20 miles an hour, or as a mile a minute. If a body is moving at a uniform rate, to find the distance that it moves in a given time, we multiply the velocity by the time. For example, a bullet moving with a velocity of 1,200 feet a second, would move in five seconds 6,000 feet if there were no change in its rate during the five seconds. On the other hand, knowing the distance which the body has moved in a given time, we can find the velocity by dividing the distance by the time. Thus, a railway train moves 90 miles in 3 hours. Dividing 90 by 3 we have a quotient of 30 to express its velocity — 30 miles an hour. Since no railway train ever ran 90 miles at a uniform raté of speed, what we have obtained here must be understood as its average rate only.

Mass-Volume By the mass of a body is meant the amount of matter (material, substance) which it contains. So long as we are dealing with bodies at the earth's surface, *mass* is equivalent to *weight*. In fact, the units employed in measuring mass are the ordinary units of weight — the pound, the ton, etc. Still, from the point of view of the physicist, mass and weight are two quite distinct, though related, things. The weight of the body is the measure of the force by which it is pulled down by gravity. It varies slightly in different parts of the earth, and differs very greatly upon the different planets. Thus, a lump of coal, which upon the earth weighs one ton, would weigh no more than one-third of a ton transported to the planet Mars, while upon Jupiter it would weigh 2.6 tons. Yet the amount of matter — the amount of coal in the lump — would remain the same. It is for this reason that in physics a special term, mass, is used to avoid the ambiguity of the ordinary term weight. The term *volume* has in physics its ordinary meaning; it is equivalent to bulk, and signifies the amount of space which a body occupies. Volume is measured in cubic feet, inches, etc.

Momentum Force being a thing invisible and intangible can be measured only by the work which it does. To hurl a stone weighing one ounce with a velocity of one hundred feet a second requires a certain expenditure of force. To give to a stone weighing two ounces the same velocity obviously will require a force twice as great; it is equivalent to hurling at the same time two stones, each weighing one ounce, applying the force to each separately. To impart the same velocity to a stone or to any other body weighing three ounces, four ounces, five ounces, will require three, four or five times the original amount of force, or in general the force required to impart to any body a given velocity depends entirely on the mass, or weight of the body. The more massive the body is, the greater will be the force required.

But suppose that while the weight of the body remains the same the velocity varies. It required a certain force to hurl our one-ounce stone a hundred feet in one second. To double its velocity we must use twice the force. If we are batting the stone we must hit it twice as hard. This will, clearly, have the same effect as striking it two blows in quick succession, each blow being sufficient to send it a hundred feet in one second. The effect of the two together will be to send it two hundred feet. To send it flying three times as fast we must strike it three times as hard, and so on.

When we measure force, then, velocity counts as well as mass. The true measure is obtained by a combination of the two, in this way. A certain force will impel a ball weighing one pound with a velocity of one hundred feet a second. To impel a five-pound ball with the same velocity will require, as we have just seen, a force five times as great. Suppose now that we wish to treble the velocity of this five-pound ball and to hurl it at the rate of three hundred feet a second; in that case we must treble the force. Thus we see that to hurl a five-pound ball with a velocity of three hundred feet a second will require 5 multiplied by 3, or 15 times as great a force as to hurl a one-pound ball with a velocity of one hundred feet a second. For these figures, 5 and 3, any others might have been used with precisely the same result — their product in the end. Thus we get a very simple rule for determining the amount of force required to give to any body any desired velocity. Rule:— *The Force is equal to the Mass multiplied by the Velocity.*

To stop a moving body requires exactly the same force as was required to impart its motion to it, since stopping it is equivalent to giving it motion with the same velocity in the opposite direction. Whether the body is stopped suddenly, as when a ball strikes a target, or gradually, as when a railway train is stopped by friction, makes no difference. Whatever force has been put into the moving body must be taken out of it in one way or another before it will cease to move. We have just seen that this force is measured by the product obtained by multiplying the mass, or weight, of the body — expressed in pounds or tons, or whatever other unit we are using — by its velocity — expressed, say, in feet per second. It is convenient to have a name for this product. It is called *momentum*. The momentum of a moving body is the product of its mass multiplied by its velocity. It represents the amount of force stored up in the moving body — the amount of work which it will do in coming to a state of rest.

The Foot-Pound

To compare forces with one another we must have a standard, just as when we compare weights and volumes. The unit of force employed usually by English physicists and engineers is the Foot-Pound. This is the force required to raise a body weighing one pound to the height of one foot in one second of time. Since any physical force can be employed in raising weight the foot-pound will measure any physical force.

Inertia

A body never moves instantaneously. However great its velocity may be, it always consumes time in moving from point to point. Neither can a body in a state of rest be put in motion nor a moving body be brought to a state of rest instantaneously. Time is required for a body either to gain or to surrender velocity. Here is a fact which turns up in mechanics in a variety of ways, and which ought to be apprehended clearly. We will try an experiment illustrative of it.

Experiment

I have suspended a flat-iron by a stout twine four feet in length, and I have attached to it a thread of sewing cotton. Having brought the suspended flat-iron as nearly as possible to a state of rest, I draw it very gently with the thread and it starts to moving slowly towards me. Keeping a steady strain on the thread, I succeed in drawing the iron to a distance of fully two feet, when the thread breaks and the iron is left swinging like a pendulum. The pull which I have been able to give is small, of course, being less than that which would break the thread; but by taking time — a couple of seconds, as I judge — I have put force into the iron little by little, until now it has a momentum as it swings sufficiently great, were the trial to be made, to drive a nail some ways into a board.

I now bring the flat-iron again to a state of rest and attempt to give it the same amount of motion instantaneously. I give the thread a quick yank. The result is that the the thread is snapped, while the iron is scarcely moved. It swings, perhaps, a quarter of an inch. The same force has been applied, but the time during which it acted has been less — the merest fraction of a second — and the movement given to the iron has been correspondingly small.

This resistance which a body makes to a change from rest to motion and from motion to rest is called *inertia*. It is closely related to momentum, and, in fact, the physicist, who deals in mathematics, deduces it as a necessary consequence of the law of momentum. But it will suffice for practical purposes to know the fact of its existence. Always keep in mind, when at work on any mechanical device, that *no body, however small, can be put in motion nor be stopped instantaneously*. It must be coaxed a little — allowed to change its state gradually.

Questions and Problems

1. Of what use is the fly-wheel of a steam engine?

2. Of what use are the springs of a wagon or of a railway car?

3. Lay a penny on a visiting card and poise card and penny on the tip of the forefinger of your left hand. Snip the edge of the card with a finger of the right hand used as a spring. The card will be sent flying while the penny will be left on the finger. What is the principle involved in this feat?

4. A battering-ram — which is simply a beam of wood suspended by chains and worked by men — weighs 2,000 pounds, and is pounding at a city gate, moving

when it strikes with a velocity of six feet a second. Is it more or less effective than a cannon which should hurl a twelve-pound ball with a velocity of 1,000 feet a second?

5. Drive a six-penny nail one inch into a pine board. Place the face of your hammer, which weighs, we will say, half a pound, on the nail and use your best efforts to press the nail further into the board. You will fail. Now raise your hammer and strike the nail with it a smart blow. You drive the nail into the board up to the head. How do you account for this great increase of force?

6. Strike an anvil a smart blow with a heavy hammer. The hammer will rebound an inch or two, at the least. Stiffen your arm as you strike as much as you will, you cannot prevent this rebound. Now strike with the same hammer and with an equal force the top of a wooden stake that stands in soft ground. You drive the stake farther into the ground, and there is no rebound. Why this difference?

Answers will be given in the next number of SELF CULTURE.

Mechanical Heat

If the question were asked, What is the principal source of heat apart from the solar energy, most persons would promptly answer, Fire. It is from the burning of fuel, wood, coal, or gas, that we obtain the heat that warms our houses, cooks our food, smelts the metals used in the arts, generates the steam that drives the machinery in our factories, drags railway trains and impels ships on the ocean. But that fire is not the only source of heat, though we may regard it as the principal, is a fact with which we are all perfectly familiar. First, there is the heat which is generated in some mysterious way within our own bodies, and which, provided we prevent its escape by the use of suitable clothing, serves to keep us warm without the use of fire even when the weather is at its coldest. Here is certainly an example of heat which is not due to fire; and yet, curiously enough, science has shown that this animal heat, as we name it, and the heat which we obtain from coal are generated in precisely the same way. Combustion is a chemical process. The action which gives rise to our internal heat is exactly the same, though less violent, as takes place when coal is consumed in a grate.

There is still another source of heat to which, though we do not ordinarily regard it as a very important or abundant source, we find it convenient occasionally to resort. Our hands are cold, and to warm them we rub them together briskly. The heat thus obtained is, obviously, not animal heat, though generated in the hands, and it is also certainly not due to fire. We can produce it by rubbing two sticks together as well as the hands. Wherever, indeed, there is friction—whenever two surfaces are rubbed together, heat is always generated in a greater or lesser amount. File a small piece of iron for a few moments vigorously, and the iron becomes so hot that it cannot be held in the hand. Two pieces of dry wood may be so greatly heated by rubbing them together as to be charred, and even to emit smoke. Indeed, by dexterous manipulation, fire may be obtained in this way, a fact discovered so early in human history that almost universally among savage tribes it has been put to service in some form of "fire-drill" or "fire-stick," by means of which fire may be obtained, if not quite as easily, yet as certainly, as we obtain it with a friction match. The friction match itself is, in fact, simply the fire-stick of primitive times improved by the addition to it of a substance, phosphorus, which ignites more readily than wood.

Heat generated in this way may be called mechanical heat, with a reference solely to its source, to distinguish it from the chemical heat of combustion and that generated by an electric current. Friction is but one of the mechanical means of generating heat, however. Strike together a piece of steel and a piece of flint, and the bits of metal and steel that are broken off by the blow fly at a white heat as sparks. Hammer a piece of lead or of iron on an anvil, and it becomes hot. Compression has the same effect as hammering. Use a leaden bullet as the fulcrum of a crowbar, in such a way that the bullet can be suddenly flattened, and it will be found to be too hot to be held in the hand with comfort. The compression of air and other gases has the same effect—the generation of heat.

This mechanical source of heat, which

ordinarily we are disposed to make but little of, turns out, upon investigation, to be really by far the most abundant of the heat sources. Wherever motion is checked or stopped, either by friction or by collision, there heat is always generated, and careful measurements have shown that the amount of heat developed is always a measure of the amount of force that has been taken from the moving body. The heat is in fact simply the force in another form, for force, like matter, is indestructible. It may change its form, but destroyed it can never be.

Friction continually robs the engineer of a part of the force applied to run his machinery. He lubricates the moving parts to prevent the waste as far as possible and to prevent the grinding and wearing of these parts. What is lost by friction is for him a dead loss. From another point of view, it is simply the diversion of force to work not intended—the generation of heat. Take the case of a railway train. No sooner does the train start to moving than friction begins. Some part of the force intended to move the train is lost, and it assumes the form of heat. If there can be any doubt of this it is dispelled by the appearance of a "hot box." A journal has not been lubricated properly; the friction is excessive in consequence; heat is generated faster than it can be dissipated into the air, and the journal becomes red-hot. The faster the train moves, the greater becomes the friction, increasing, in fact, much faster than the velocity increases, until finally the train reaches a speed so great that the utmost force that the engine can exert is sufficient only to supply the place of this continually wasted force. The train is now running with its greatest possible speed, and it is moving entirely by virtue of its momentum—the force that has been gradually put into it—and the whole power of the engine is employed in overcoming friction. That is to say, this engine, which seems to be moving the train, is really engaged wholly in generating heat. Its motive power is heat—the heat of the coal burning in its fire box,—and this power, or force, applied to the train is instantly reconverted into its original form. The wheels of the train are heated; the rails are heated; the sides of the cars are heated by the friction of the air. But the heat spread over so much surface amounts only to warmth, and is rapidly dissipated into the air.

Now comes the stopping of the train. The steam is shut off. Even if nothing more were done the force stored up in the train in the form of momentum would rapidly ooze out of it through friction and assume the form of heat. But it is desired to stop the train quickly, and the friction is designedly increased by applying brakes to the wheels. And now if we still have doubts on the subject, the sparks which fly from the brake shoes must convince us that the force which urged the train is being transmuted into heat. The train has been stopped; and now if it were possible to gather up all of the odds and ends of the heat which has been generated by friction and scattered along the line, we should find that the sum total was precisely the amount that had been generated by the ton or more of coal consumed during the run of the train.

In this case we started with heat as the motive force, and saw it after doing its work reconverted into the same form. The same conversion would have taken place had the original force been in any other form. The stopping of projectiles, which always results in heat, is another instance of its mechanical generation. The velocity and weight of a projectile being known, the amount of heat developed by its stoppage can always be calculated. In the case of large bodies moving rapidly, we get from the calculation results the most astounding. Thus, the earth weighs 6,000 million-million-million tons. It travels in its orbit with a velocity of more than eighteen miles a second. Should it strike a target strong enough to stop its motion, the heat developed by the shock would be sufficient not merely to fuse the earth, but also to reduce a large portion of it to vapor.* It has been calculated that the amount of heat generated by a collision so colossal would equal that obtained from the burning of fourteen globes of coal, each equal to the earth in size. And should the earth after this stoppage fall into the sun, as it certainly would, the amount of heat developed by its impact on the sun would be equal to that generated by the combustion of 5000 earths of solid carbon.

* Tyndall, "Heat as a Mode of Motion."

QUESTION DEPARTMENT
OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

THE answers to SELF CULTURE questions for May will be found in Vol. X., of the new Encyclopædia Britannica on the page indicated by the number which follows the question.

May 1. In the forthcoming war involving Turkey, Greece and the Great Powers, what importance will Gibraltar have for England? 583

May 2. What inventions and discoveries by Galileo placed astronomy on a new footing, and established mechanics as a science? 30

May 3. What country is the habitat of the giraffe, the most peculiar of the ruminant animals? 618

May 4. What indications of Germany's strength and stability are furnished by the empire's statistics of population, industries, etc? 447–472 and 746, Supplement

May 5. What was the status of the gladiators in ancient Rome, and what was the influence of the gladiatorial games on the morals and genius of the Roman people? 631

May 6. What are the chief facts of English history during the period covered by the reigns of the four Georges. 420–428

May 7. What extension has the manufacture and use of gas undergone since it was first used for lighting? 87

May 8. How does the Genoa of to-day compare with the Genoa in the times of the Crusades? 154

May 9. With what vast array of facts and phenomena does cosmical geology have to do? 212–216

May 10. What common origin of the Gipsies of every land is indicated by their habits, language, and physical characteristics? 611

May 11. What determined Gibbon to undertake the gigantic literary task that occupied his life's best efforts? 572 (See also this issue of SELF CULTURE)

May 12. What opened the way for Prussia's ascendency in Germany and subsequent alliance with her rival Austria? 501–513

May 13. In what countries has gold been found in paying quantities, and what are the usual methods of handling the ore? 741–745 and 763, Supplement

May 14. What differences marked the athletic games as conducted in ancient Greece and Rome? 63

May 15. What were the chief episodes and closing scenes of a life "itself a work of art greater than any work it created" — the life of Goethe, the apostle of modern self-culture? 721

May 16. Of the forces of dynamical geology, which are the more active and powerful, those denominated *hypogene* (underground), as volcanoes and earthquakes, or those called *epigene* (on the surface), as air, water, etc.? 239, 240, 263

May 17. What are the conclusions of scientists regarding the existence of giants and races of men of enormous stature? 571

May 18. Which were the more considerable of Gay-Lussac's discoveries during a lifetime devoted to investigations in Chemistry and Physics? 121

May 19. What regions have ever offered the greatest obstacles to geographical discovery, and have therefore remained the least known? 175

May 20. What made Oliver Goldsmith's writings popular in spite of the laughable misstatements which characterize them? 760

May 21. How is the constant motion of the Swiss glaciers accounted for? 626 and 757, Supplement

May 22. Through what agencies did William Lloyd Garrison expect to bring about the abolition of slavery in the United States? 85

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May 24. How did Garrick's success on the stage compare with Goldsmith's in literature? 83

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May 27. How is the action of geysers explained, and where are the most remarkable of these hot-water fountains of nature situated? 556

May 28. What European countries were overrun and occupied by the Goths, the most powerful of the Teutonic nations, and of ten the only one which has wholly passed away without fastening its name or language on any country or province? 846

May 29. How old is the use of gloves, and what cities now lead in the manufacture of the different kinds? 692

May 30. What were the special deserts of the three men to whom German literature owes the most? 536, 537 and 538.

May 31. When did the art of glass-painting originate, and to what kind of illustration is it peculiarly adapted? 667

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V JUNE, 1897 No. 3

THE EARLY YEARS OF ABRAHAM LINCOLN

BY GOLDWIN SMITH, D.C.L. (OXON), PROFESSOR OF CONSTITUTIONAL HISTORY, CORNELL UNIVERSITY, N. Y.

OUR readers need not be afraid that we are going to bore them with the Slavery Question or the Civil War. We deal here not with the Martyr President, but with Lincoln in embryo, leaving the great man at the entrance of the grand scene.

After the murder, criticism, of course, was for a time impossible. Martyrdom was followed by canonization, and the popular heart could not be blamed for overflowing in hyperbole. The fallen chief "was Washington, he was Moses, and there were not wanting even those who likened him to the God and Redeemer of all the earth. These latter thought they discovered in his early origin, his kindly nature, his benevolent precepts, and the homely anecdotes in which he taught the people, strong points of resemblance between him and the Divine Son of Mary." A halo of myth naturally gathered round the cradle of this new Moses. Among other fables, it was believed that the President's family had fled from Kentucky to Indiana to escape the taint of Slavery. Thomas Lincoln, the father of Abraham, was migratory enough, but the course of his migrations was not determined by high moral motives, and we may safely affirm that had he ever found himself among the fleshpots of Egypt, he would have stayed there, however deep the moral darkness might have been. He was a thriftless "ne'er do weel," who had very commonplace reasons for wandering away from the miserable, solitary farm in Kentucky, on which his child first formed a sad acquaintance with life and nature, and which, as it happened, was not in the slave-owning region of the State. His decision appears to have been hastened by a "difficulty" he got into, which is set forth in one of the biographies of his son, to which we are indebted for many of the facts in this paper.*

Lincoln senior drifted to Indiana, and in a spot which was then an almost untrodden wilderness, built a *casa santa*, which his connection, Dennis Hanks, calls "that darned little half-faced camp" — a dwelling enclosed on three sides and open on the fourth, without a floor, and called a camp, it seems, because it was made of poles, not of logs. He afterwards exchanged the "camp" for the more ambitious "cabin;" but his cabin was "a rough, rough log one," made of unhewn timber, and without floor, door or window. In this "rough, rough" abode, his lanky, lean-visaged, awkward and somewhat pensive, though strong, hearty and patient son Abraham had a "rough, rough" life, and underwent experiences which, if they were not calculated to form a Pitt or a Turgot, were calculated to season a politician, and make him a winner in the tough struggle for existence, as well as to identify him with the people, faithful representation of whose aims, sentiments, tastes, pas-

* "The Life of Abraham Lincoln from his Birth to his Inauguration as President." By Ward H. Lamon.

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sions and prejudices was the one thing needful to qualify him for obtaining the prize of his ambition.

"For two years Lincoln (the father) continued to live alone in the old way. He did not like to farm, and he never got much of his land under cultivation. His principal crop was corn; and this, with the game which a rifleman so expert would easily take from the woods around him, supplied his table." It does not appear that he employed any of his mechanical skill in completing and furnishing his own cabin. It has already been stated that the latter had no window, door or floor. The son slept in the loft, "to which he ascended by means of pins driven into holes in the wall."

Of his father's disposition, Abraham seems to have inherited at all events the dislike to labor, though his sounder moral nature prevented him from being an idler. His tendency to politics came from the same element of character as his father's preference for the rifle. In after-life, we are told, his mind "was filled with gloomy forebodings and strong apprehensions of impending evil, mingled with extravagant visions of personal grandeur and power." His melancholy, characterized by all his friends as "terrible," was closely connected with the cravings of his demagogic ambition, and the root of both was in him from a boy.

In the Indiana cabin Abraham's mother, whose maiden name was Nancy Hanks, died, far from medical aid, of the epidemic called milk sickness. She was preceded in death by her relatives, the Sparrows, who had succeeded the Lincolns in the "camp," and by many neighbors, whose coffins Thomas Lincoln made out of "green lumber cut with a whipsaw." Upon Nancy's death he took to his green lumber again and made a box for her. "There were about twenty persons at her funeral. They took her to the summit of a deeply wooded knoll, about half a mile southeast of the cabin, and laid her beside the Sparrows. If there were any burial ceremonies, they were of the briefest. The great trees were originally cut away to make a small cleared space for this primitive graveyard; but the young dogwoods have sprung up unopposed in great luxuriance, and in many instances the names of pilgrims to the burial place of the great Abraham Lincoln's mother are carved on their bark. With this exception, the spot is wholly unmarked. The grave never had a stone, nor even a board, at its head or its foot; and the neighbors still dispute as to which of these unsightly hollows contains the ashes of Nancy Lincoln." If Democracy in the New World sometimes stones the prophets, it is seldom guilty of building their sepulchres. Out of sight, off the stump, beyond the range of the interviewer, heroes and martyrs soon pass from the mind of a fast-living people; and weeds may grow out of the dust of Washington. But in this case what neglect has done good taste would have dictated; it is well that the dogwoods are allowed to grow unchecked over the wilderness grave.

Thirteen months after the death of his Nancy, Thomas Lincoln went to Elizabethtown, Kentucky, and suddenly presented himself to Mrs. Sally Johnston, who had in former days rejected him for a better match, but had become a widow. "Well, Mrs. Johnston, I have no wife and you have no husband, I came a purpose to marry you. I knowed you from a gal and you knowed me from a boy. I have no time to lose, and if you are willin', let it be done straight off." "Tommy, I know you well, and have no objection to marrying you; but I cannot do it straight off, as I owe some debts that must first be paid." They were married next morning, and the new Mrs. Lincoln, who owned, among other wondrous household goods, a bureau that cost forty dollars, and who had been led, it seems, to believe that her new husband was reformed and a prosperous farmer, was conveyed with her bureau to the smiling scene of his reformation and prosperity. Being, however, a sensible Christian woman, she made the best of a bad bargain, got her husband to put down a floor and hang doors and windows, made things generally decent, and was very kind to the children, especially to Abe, to whom she took a great liking, and who owed to his good stepmother what other heroes have owed to their mothers. "From that time on," according to his garrulous relative, Dennis Hanks, "he appeared to lead a new life." It seems to have been difficult to extract from him, "for campaign purposes," the incidents of his life before it took this happy turn.

He described his own education in a Congressional handbook as "defective." In Kentucky he occasionally trudged with his little sister, rather as an escort than as a school-fellow, to a school four miles off, kept by one Caleb Hazel, who could teach reading and writing after a fashion, and a little arithmetic, but whose great qualification for his office lay in his power and readiness "to whip the big boys." So far American respect for popular education as the key to success in life prevailed even in those wilds, and in such a family as that of Thomas Lincoln. Under the auspices of his new mother, Abraham began attending school again. The master was one Crawford, who taught not only reading, writing and arithmetic, but "manners."

Mr. Crawford, it seems, was a martinet in spelling, and one day he was going to punish a whole class for failing to spell *defied*, when Lincoln telegraphed the right letter to a young lady by putting his finger with a significant smile to his eye. Many years later, however, and after his entrance into public life, Lincoln himself spelt *apology* with a double p, *planning* with a single n, and *very* with a double r. His schooling was very irregular, his school days hardly amounting to a year in all, and such education as he had was picked up afterwards by himself. His appetite for mental food, however, was always strong, and he devoured all the books, few and not very select, which could be found in the neighborhood of "Pigeon Creek."

Equally strong was his passion for stump oratory, the taste for which pervades the New World, even in the least intellectual districts, as the taste for church festivals pervades the people of Spain, or the taste for cricket the people of England. Abe's neighbor, John Romine, says "he was awful lazy. He worked for me; was always reading and thinking; used to get mad at him. He worked for me in 1829, pulling fodder. I say Abe was awful lazy, he would laugh and talk and crack jokes all the time; didn't love work, but did dearly love his pay." He liked to lie under a shade tree, or up in the loft of the cabin and read, cipher, or scribble. At night he ciphered by the light of the fire on the wooden fire shovel. He practiced stump oratory by repeating the sermons, and sometimes by preaching himself, to his brothers and sister. His gifts in the rhetorical line were high. When it was announced in the harvest field that Abe had taken the stump, work was at an end.

Abe's first written composition appears to have been an essay against cruelty to animals, a theme the choice of which was at once indicative of his kindness of heart and practically judicious, since the young gentlemen in the neighborhood were in the habit of catching terrapins and putting hot coals upon their backs. The essay appears not to have been preserved, and we cannot say whether its author succeeded in explaining that ethical mystery —the love of cruelty in boys.

Society in the neighborhood of Pigeon Creek was of the thorough backwoods type; as coarse as possible, but hospitable and kindly, free from cant and varnish, and a better school of life than of manners, though, after all, the best manners are learned in the best school of life, and the school of life in which Abe studied was not the worst. He became a leading favorite, and his appearance, towering above the other hunting shirts, was always the signal for the fun to begun. His nature seems to have been, like many others, open alike to cheerful and to gloomy impressions. A main source of his popularity was the fund of stories to which he was always adding, and to which in after-life he constantly went for solace, under depression or responsibility, as another man would go to his cigar or snuff box. The taste was not individual but local, and natural to keen-witted people who had no other food for their wits. In those circles "the ladies drank whisky-toddy, while the men drank it straight."

Lincoln was by no means fond of drink, but in this, as in everything else, he followed the great law of his life as a politician, by falling in with the humor of the people. One cold night he and his companions found an acquaintance lying dead-drunk in a puddle. All but Lincoln were disposed to let him lie where he was, and freeze to death. But Abe "bent his mighty frame, and taking the man in his long arms, carried him a great distance to Dennis Hanks' cabin. There he built a fire, warmed, rubbed and nursed him through the entire night, his companions having left him alone in his merciful task." His real kindness of heart is always coming out in the most striking

way, and it was not impaired even by civil war.

Lincoln had a very good constitution, but his frame hardly bespoke great strength; he was six feet four and large-boned, but narrow chested, and had almost a consumptive appearance. His strength, nevertheless, was great. We are told that, harnessed with ropes and straps, he could lift a box of stones weighing from a thousand to twelve hundred pounds. In wrestling, of which he was very fond, he had not his match near Pigeon Creek, and only once found him anywhere else. He was also formidable as a pugilist. But he was no bully; on the contrary he was peaceable and chivalrous in a rough way.

That Abraham Lincoln should have said, when a bare-legged boy, that he intended to be President of the United States, is not remarkable. Every boy in the United States says it. But Lincoln was really carrying on his political education. Dennis Hanks is asked how he and Lincoln acquired their knowledge. "We learned," he replies, "by sight, scent and hearing. We heard all that was said, and talked over and over the questions heard; wore them slick and threadbare. Went to political and other speeches and gatherings, as you do now; we would hear all sides and opinions, talk them over, discuss them, agreeing or disagreeing. Abe was originally a Democrat after the order of Jackson; so was his father, so we all were. . . . He preached, made speeches, read for us, explained to us, &c. . . . . Abe was a cheerful boy, a witty boy; was humorous always; sometimes would get sad, not very often. . . . Lincoln would frequently make political and other speeches; he was calm, logical and clear always. He attended trials, went to court always, read the Revised Statutes of Indiana, dated 1824, heard law speeches, and listened to law trials. He was always reading, scribbling, writing, ciphering, writing poetry and the like. Abe was a good talker, a good reader, and was a kind of newsboy." One or two articles written by Abe found their way into obscure journals, to his infinite gratification. His foot was on the first round of the ladder. It is right to say that his culture was not solely political, and that he was able to astonish the natives of Gentryville by explaining that when the sun appeared to set, it "was we did the sinking and not the sun."

Abe was tired of his home, as a son of Thomas Lincoln might be, without disparagement to his filial piety; and he was glad to get off with a neighbor on a commercial trip down the river to New Orleans. The trip was successful in a small way, and Abe soon after repeated it with other companions. In the first trip the great emancipator came in contact with the negro in a way that did not seem likely to prepossess him in favor of the race. The boat was boarded by negro robbers, who were repulsed only after a fray in which Abe got a scar which he carried to the grave. But he saw with his own eyes slaves manacled and whipped at New Orleans; and though his sympathies were not far-reaching, the actual sight of suffering never failed to make an impression on his mind. A negrophilist he never became. "I protest," he said afterwards, when engaged in the slavery controversy, "against the counterfeit logic which concludes that because I do not want a black woman for a slave I must necessarily want her for a wife. I need not have her for either. I can just leave her alone. In some respects she certainly is not my equal; but in her natural right to eat the bread which she earns with her own hands, she is my equal and the equal of all others." It would be difficult to put the case better.

While Abraham Lincoln was trading to New Orleans, his father, Thomas Lincoln, was on the move again. This time he migrated to Illinois, and there again shifted from place to place, gathering no moss, till he died as thriftless and poor as he had lived. We have, in later years, an application from him to his son for money, to which the son responds in a tone which implies some doubt as to the strict accuracy of the ground on which the old gentleman's request was preferred. Their relations were evidently not very affectionate, though there is nothing unfilial in Abe's conduct. Abraham himself drifted to Salem on the Sangamon, in Illinois, twenty miles northwest of Springfield, where he became clerk in a new store, set up by Denton Offutt, with whom he had formed a connection in one of his trips to New Orleans. Salem was then a village of a dozen houses, and the little centre of a society very like that of

Pigeon Creek and its neighborhood, but more decidedly western. We are told that "here Mr. Lincoln became acquainted with a class of men the world never saw the like of before or since. They were large men,—large in body and large in mind; hard to whip and never to be fooled. They were a bold daring and reckless set of men; they were men of their own minds,—believed what was demonstrable, were men of great common sense. With these men Mr. Lincoln was thrown; with them he lived and with them he moved and almost had his being. They were skeptics all—scoffers some. These scoffers were good men, and their scoffs were protests against theology—loud protests against the follies of Christianity; they had never heard of theism and the new and better religious thoughts of this age. Hence, being natural skeptics and being bold, brave men, they uttered their thoughts freely."

It seems to be proved, by conclusive evidence, that Mr. Lincoln shared the sentiments of his companions, and that he was never a member of any Church, a believer in the divinity of Christ, or a Christian of any denomination. He is described as an avowed, an open free-thinker, sometimes bordering on atheism, going extreme lengths against Christian doctrines, and "shocking" men whom it was probably not very easy to shock. He even wrote a little work on "Infidelity," attacking Christianity in general, and especially the belief that Jesus was the Son of God; but the manuscript was destroyed by a prescient friend, who knew that its publication would ruin the writer in the political market. There is reason to believe that Burns contributed to Lincoln's skepticism, but he drew it more directly from Volney, Paine, Hume and Gibbon. His fits of downright atheism appear to have been transient; his settled belief was theism with a morality which, though he was not aware of it, he had really derived from the Gospel. It is needless to say that the case had never been rationally presented to him, and that his decision against Christianity would prove nothing, even if his mind had been more powerful than it was. Like many skeptics, he was liable to superstition, especially to the superstition of self-consciousness, a conviction that he was the subject of a special decree made by some nameless and mysterious power. Even from a belief in apparitions he was not free.

Abe's popularity grew apace; his ambition grew with it; it is astonishing how readily and freely the plant sprouts upon that soil. He was at this time carrying on his education evidently with a view to public life. Books were not easily found. He wanted to study English Grammar, considering that accomplishment desirable for a statesman; and, being told that there was a Grammar in a house six miles from Salem, he left his breakfast at once and walked off to borrow it. He would slip away into the woods and spend hours in study and thinking. He sat up late at night, and as light was expensive, made a blaze of shavings in the cooper's shop. He waylaid every visitor to New Salem who had any pretense to scholarship, and extracted explanations of things which he did not understand. It does not appear that the work of Adam Smith, or any work upon political economy, currency, or any financial subject fell into the hands of the student who was destined to conduct the most tremendous operations in the whole history of finance.

The next episode in Lincoln's life which may be regarded as a part of his training was the command of a company of militia in the "Black Hawk" war. Black Hawk was an Indian chief of great craft and power, and, apparently, of fine character, who had the effrontery to object to being improved off the face of creation, an offense which he aggravated by an hereditary attachment to the British. At a muster of the Sangamon company at Clary's Grove, Lincoln was elected captain. The election was a proof of his popularity; but he found it rather hard to manage his constituents in the field. The campaign opened with a cleverly-won victory on the part of Black Hawk, and a rapid retrograde movement on the part of the militia. Ultimately, however, Black Hawk was overpowered, and most of his men met their doom in attempting to retreat across the Mississippi.

"During this short Indian campaign," says one who took part in it, "we had some hard times, often hungry, but we had a great deal of sport, especially at nights—foot racing, some horse racing, jumping, telling anecdotes, in

which Lincoln beat all, keeping up a constant laughter and good humor all the time; among the soldiers some card-playing and wrestling in which Lincoln took a prominent part. I think it safe to say he was never thrown in a wrestle. While in the army he kept a handkerchief tied around him all the time for wrestling purposes, and loved the sport as well as anyone could. He was seldom if ever beat jumping. During the campaign Lincoln himself was always ready for an emergency. He endured hardships like a good soldier; he never complained, nor did he fear dangers."

Returning to New Salem, Lincoln, having served his apprenticeship as a clerk, commenced storekeeping on his own account. An opening was made for him by the departure of Mr. Radford, the keeper of a grocery, who, having offended the Clary's Grove boys, they "selected a convenient night for breaking in his windows and gutting his establishment." From his ruins rose the firm of Lincoln & Berry.

In storekeeping, however, Mr. Lincoln did not prosper; neither storekeeping nor any other regular business or occupation was congenial to his character. He was born to be a politician. Accordingly he began to read law, with which he combined surveying, at which we are assured he made himself "expert" by a six weeks' course of study. The few law books needed for western practice were supplied to him by a kind friend at Springfield, and, according to a witness who has evidently an accurate memory for details, "he went to read law in 1832 or 1833 barefooted, seated in the shade of a tree and would grind around with the shade, just opposite Berry's grocery store, a few feet south of the door, occasionally lying flat on his back and putting his feet up the tree." Evidently, whatever he read, especially of a practical kind, he made thoroughly his own. It is needless to say that he did not become a master of scientific jurisprudence; but it seems that he did become an effective western advocate. What is more, there is conclusive testimony to the fact that he was — what has been scandalously alleged to be rare, even in the United States — an honest lawyer.

"Love of justice and fair play," says one of his professional brothers of the bar, "was his predominant trait. I have often listened to him when I thought he would state his case out of Court. It was not in his nature to assume or attempt to bolster up a false position. He would abandon his case first. His power as an advocate seems to have depended on his conviction that the right was on his side. Mr. Herndon, who visited Lincoln's office on business, gives the following reminiscence: "Mr. Lincoln was seated at his table, listening very attentively to a man who was talking earnestly in a low tone. After the would-be client had stated the facts of the case, Mr. Lincoln replied, 'yes, there is no reasonable doubt but that I can gain your case for you. I can set a whole neighborhood at logger heads; I can distress a widowed mother and her six fatherless children, and thereby get for you six hundred dollars, which rightly belongs, it appears to me, as much to the woman and her children as it does to you. You must remember that some things that are legally right are not morally right. I shall not take your case but will give you a bit of advice, for which I will charge you nothing. You seem to be a sprightly, energetic man. I would advise you to try your hand at making six hundred dollars in some other way.'"

There is one part of Lincoln's early life which, though scandal may batten on it, we shall pass over lightly; we mean that part which relates to his love affairs and his marriage. Criticism, and even biography, should respect as far as possible the sanctuary of affection. That a man has dedicated his life to the service of the public is no reason why the public should be licensed to amuse itself by playing with his heartstrings. Not only as a storekeeper, but in every capacity, Mr. Lincoln was far more happy in his relations with men than with women. He however loved, and loved deeply, Ann Rutledge, who appears to have been entirely worthy of his attachment, and whose death at the moment when she would have felt herself at liberty to marry him, threw him into a transport of grief, which threatened his reason and excited the gravest apprehension of his friends. In stormy weather, especially, he would rave piteously, crying that he could "never be reconciled to have the snow, rains and storms to beat upon her grave." This first love he seems never to have forgotten. He next had

an affair, not so creditable to him. Finally, he made a match of which the world has heard, perhaps, enough, though the western boy was too true a gentleman to let it hear anything about the matter from his lips. It is enough to say that this man was not wanting in that not inconsiderable element of worth, even of the worth of statesmen, strong and pure affection.

"If ever," said Abraham Lincoln, "American society and the United States Government are demoralized and overthrown, it will come from the voracious desire of office—this wriggle to live without toil, from which I am not free myself." These words ought to be written up in the largest characters in every schoolroom in the United States. The confession with which they conclude is as true as the rest. Mr. Lincoln, we are told, took no part in the promotion of local enterprises, railroads, schools, churches, asylums. The benefits he proposed for his fellow-men were to be accomplished by political means alone.

Lincoln's fundamental principle was devotion to the popular will. In his address to the people of Sangamon County, he says, "while acting as their representative I shall be governed by their will on all subjects upon which I have the means of knowing what their will is, and upon all others I will do what my own judgment teaches me will advance their interests."

Lincoln's first attempt to get elected to the State legislature was unsuccessful. It however brought him the means of "doing something for his country," and partly averting the "death-struggle of the world," in the shape of the postmastership of New Salem. The business of the office was not on a large scale, for it was carried on in Mr. Lincoln's hat—an integument of which it is recorded, that he refused to give it to a conjurer to play the egg trick in, "not from respect for his own hat, but for the conjurer's eggs." The future President did not fail to signalize his first appearance as an administrator by a sally of the jocularity which was always struggling with melancholy in his mind. A gentleman of the place, whose education had been defective, was in the habit of calling two or three times a day at the post-office, and ostentatiously inquiring for letters. At last he received a letter, which, being unable to read himself, he got the postmaster to read for him before a large circle of friends. It proved to be from a negro lady engaged in domestic service in the South, recalling the memory of a mutual attachment, with a number of incidents more delectable than sublime. It is needless to say that the postmaster, by a slight extension of the sphere of his office, had written the letter as well as delivered it.

In a second candidature the aspirant was more successful, and he became one of nine representatives of Sangamon County, in the State legislature of Illinois, who, being all more than six feet high, were called "The Long Nine." With his Brobdingnagian colleagues, Abraham plunged at once into the "internal improvement system," and distinguished himself above his fellows by the unscrupulous energy and strategy with which he urged through the legislature a series of bubble schemes and jobs. Railroads and other improvements, especially improvements of river navigation, were voted out of all proportion to the means or credit of the then thinly-peopled State.

It is instructive as well as just to remember that all this time the man was strictly, nay sensitively, honorable in his private dealings, that he was regarded by his fellows as a paragon of probity, that his word was never questioned, that of personal corruption calumny itself, so far as we are aware, never dared to accuse him. Politics, it seems, may be a game apart, with rules of its own which supersede morality.

Considering that this man was destined to preside over the most tremendous operations in the whole history of finance, it is especially instructive to see what was the state of his mind on economical subjects. He actually proposed to pass a usury law, having arrived, it appears, at the sage conviction that while to pay the current rent for the use of a house or the current fee for the services of a lawyer is perfectly proper, to pay the current price for money is to "allow a few individuals to levy a direct tax on the community." But this is an ordinary illusion. Abraham Lincoln's illusions went far beyond it. As President, when told that the finances were low, he asked whether the printing machine had given out, and he suggested, as a special temptation to capitalists, the issue of a

class of bonds which should be exempt from seizure for debt. It may safely be said that the burden of the United States debt was ultimately increased fifty per cent. through sheer ignorance of the simplest principles of economy and finance on the part of those by whom it was contracted.

Lincoln's style, both as a speaker and a writer, ultimately became plain, terse, and with occasional faults of taste, caused by imperfect education, pure as well as effective. His Gettysburg address and some of his State Papers are admirable in their way. Saving one very flat expression, the address has no superior in literature. But it was impossible that the oratory of a rising politician, especially in the west, should be free from spread-eagleism. In debate he was neither bitter nor personal in the bad sense, though he had a good deal of caustic humor and knew how to make an effective use of it.

Passing from State politics to those of the Union, and elected to Congress as a Whig, a party to which he had gradually found his way from his original position as a "nominal Jackson man," Mr. Lincoln stood forth in vigorous though discreet and temperate opposition to the Mexican War.

Great events were by this time beginning to loom on the political horizon. The Missouri Compromise was broken. Parties commenced slowly but surely to divide themselves into Pro-slavery and Anti-slavery. The "irrepressible conflict" was coming on, though none of the American politicians — not even the author of that famous phrase — distinctly recognized its advent. Lincoln seems to have been sincerely opposed to slavery, though he was not an Abolitionist. But he was evidently led more and more to take anti-slavery ground by his antagonism to Douglas, who occupied a middle position, and tried to gain at once the support of the South and that of the waverers at the North, by theoretically supporting the extension of slavery, yet practically excluding it from the territories by the doctrine of squatter sovereignty. Lincoln had to be very wary in angling for the vote of the Abolitionists, who had recently been the objects of universal obloquy, and were still offensive to a large section of the Republican party.

On one occasion, the opinions which he propounded by no means suited the Abolitionists, and "they required him to change them forthwith. *He thought it would be wise to do so considering the peculiar circumstances of his case;* but, before committing himself finally, he sought an understanding with Judge Logan. He told the judge what he was disposed to do, and said he would act upon the inclination if the judge would not regard it as treading on his toes. The judge said he was opposed to the doctrine proposed, but, for the sake of the cause on hand, he would cheerfully risk his toes. *And so the Abolitionists were accommodated.* Mr. Lincoln quietly made the pledge, and they voted for him." He came out, however, square enough, and in the very nick of time with his "house divided against itself" speech, which took the wind out of the sails of Seward with his "irrepressible conflict." Douglas, whom Lincoln regarded with intense personal rivalry, was tripped up by a string of astute interrogations, the answers to which hopelessly embroiled him with the South.

Lincoln's campaign against Douglas for the Senatorship greatly and deservedly enhanced his reputation as a debater, and he became marked out as the western candidate for the Republican nomination to the Presidency. A committee favorable to his claims sent to him to make a speech at New York. He arrived "in a sleek and shining suit of new black, covered with very apparent creases and wrinkles acquired by being packed too closely and too long in his little valise." Some of his supporters must have moralized on the strange apparition which their summons had raised. His speech, however, made before an immense audience at the Cooper Institute, was most successful, and as a display of constitutional logic it is a very good speech. It fails, as the speeches of these practical men one and all did fail, their common sense and shrewdness notwithstanding, in clear perception of the great facts that two totally different systems of society had been formed, one in the Slave States and the other in the Free, and that political institutions necessarily conform themselves to the social character of the people. Whether the Civil War could, by any men or means, have been arrested, it would be hard to say; but assuredly stump orators, even the very best of

them, were not the men to avert it. At that great crisis no saviour appeared.

On May 10th, in the eventful year 1860, the Republican State Convention of Illinois, by acclamation, and amid great enthusiasm, nominated Lincoln for the Presidency. One who saw him receive the nomination says, "I then thought him one of the most diffident and most plagued of men I ever saw." We may depend upon it, however, that his diffidence of manner was accompanied by no reluctance of heart. The splendid prize which he had won had been the object of his passionate desire. In the midst of the proceedings, the door of the wigwam opened, and Lincoln's kinsman, John Hanks, entered, with "two small triangular 'heart-rails,' surmounted by a banner with the inscription, 'Two rails from a lot made by Abraham Lincoln and John Hanks in the Sangamon bottom, in the year 1830." The bearer of the rails, we are told, was met "with wild and tumultuous cheers," and "the whole scene was simply tempestuous and bewildering."

The Democrats, of course, did not share the delight. An old man, out of Egypt (the southern end of Illinois) came up to Mr. Lincoln, and said: "So you're Abe Lincoln?" "That's my name, sir." "They say you're a self-made man." "Well, yes, what there is of me is self-made." "Well, all I have got to say," observed the old Egpytian, after a careful survey of the statesman, "is, that it was a d—n bad job." This seems to be the germ of the smart reply to the remark that Andrew Jackson was a self-made man, "that relieves the Almighty of a very heavy responsibility."

The nomination of the State Convention of Illinois was accepted after a very close and exciting contest between Lincoln and Seward by the convention of the Republican party assembled at Chicago. The proceedings seem to have been disgraceful. A large delegation of roughs, we are told, headed by Tom Shyer, the pugilist, attended for Seward. The Lincoln party, on the other side, spent the whole night in mustering their "loose fellows," and at daylight the next morning packed the wigwam, so that the Seward men were unable to get in. Another politician was there nominally as a candidate, but really only to sell himself for a seat in the Cabinet. When he claimed the fulfilment of the bond, Lincoln's conscience, or at least his regard for his own reputation struggled hard. "All that I am in the world—the Presidency and all else—I owe to that opinion of me which the people express when they call me 'honest old Abe.' Now, what will they think of their honest Abe when he appoints this man to be his familiar adviser?" What they might have said with truth was that Abe was still honest but politics were not.

Widely different was the training undergone for the leadership of the people by the Pericles of the American Republic from that undergone by the Pericles of Athens, or by any group of statesmen before him, Greek, Roman, or European. The advantages and the disadvantages of Lincoln's political education are manifest at a glance. He was sure to produce something strong, genuine, practical, and entirely in unison with the thoughts and feelings of a people which, like the Athenian in the days of Pericles, was to be led, not governed. On the other hand, it necessarily left the statesman without the special knowledge necessary for certain portions of his work, such as finance, which was badly managed during Lincoln's Presidency, without the wisdom which flows from a knowledge of the political world and of the past, without elevation and comprehensiveness of view. It was fortunate for Lincoln that the questions with which he had to deal, and with which his country and the world proclaim him to have dealt, on the whole, admirably well, though not in their magnitude and importance, were completely within his ken, and had been always present to his mind. Reconstruction would have made a heavier demand on the political science of Clary's Grove. But that task was reserved for other hands.*

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* The foregoing article, written a number of years ago for a volume of Lectures and Essays, originally printed for private circulation, we have the kind permission of the author to reproduce here. To bring it within the scope of our pages, the essay has been considerably abridged. Despite the latter fact, the paper will doubtless prove acceptable to our readers, as it presents some interesting phases in the early career of Lincoln not usually met with in later-day critiques. ED. S. C.

A REIGN FRUITFUL IN HIGH ACHIEVEMENT

THE reign of Queen Victoria is at once the longest and most fruitful in British history. Since she ascended the throne her Empire has broadened its bounds until to-day it numbers one-fourth the population of the world. And the sway of Victoria finds response in a loyalty very different from the grudging submission accorded her predecessors — especially her immediate predecessors on the throne. For all that the blood of the Stuarts flows in her veins, and granddaughter of George III. though she is, the Queen has been content to reign simply, and leave the task of government to her constitutional advisers. Such influence upon public affairs as she may have exerted has ever been on the side of peace and good-will; by kin or marriage bond the chief rulers of Europe are of her family, so that her influence has often at critical times been weighty, and, perhaps, more than once, decisive. In domestic politics her convictions are almost unknown; she stands for no party, but for the whole people, who rally round the throne as built upon a foundation deeper far than any moving tent of political sect or faction. Thrice happy has it been for England that, in the sixty eventful years when the tide of democratic feeling reflected from the shores of America has surged higher and higher, the sceptre of empire has rested in the gentle hand of a woman. A king, however tactful, wise and gracious, could scarcely have been so completely detached from kingly traditions of personal rule; and rare indeed in the roll of kings is the record of a home life so admirable as that of this good wife and mother.

While the reign of Elizabeth stands forth preëminently as the age of victory in arms, of an unexampled outburst in literary genius, the epoch of Victoria will be ever memorable as the golden era of Science. Within the past six decades man has entered upon an insight into nature and a mastery of her forces incomparably greater than during the six centuries that went before, and in this progress Englishmen have borne a leading part. The locomotive and the steamship, both British inventions, had been but introduced in 1837; these, with the telegraph, largely a product of British skill and enterprise, have transformed the world. Indeed, without them there could be no such colonial empire as that which to-day, scattered upon every sea, finds itself within earshot and control of Westminster. To Faraday, Wheatstone, Maxwell, and Kelvin are due the instruments, or the researches, which at this hour bring electricity to services of more moment to man than those which had their birth when first he kindled fire and rejoiced.

If Newton dignified the reign of Anne by his discovery of universal gravitation, yet more has Spencer glorified the age of Victoria by expounding the profounder law of universal evolution. In this mighty task his chief ally was Darwin, the first naturalist of the century. Nor is it only in the triumphs of the chemist, the physicist, or the philosopher that radiance is reflected upon the garlands of Victoria. So much has the well-being of her subjects advanced since 1837, that the life of the average Englishman has been lengthened by no less than four years. While comfort has been diffused throughout the whole body of the people, crime and pauperism have subsided. With public opinion omnipotent and intelligent as never before, the government responds to the progressive needs of the people in a fashion that denies birth to the discontent which brings a cloud to the brow of every other monarch of Europe.

Whilst in the past six decades British progress has been mainly in the fields of science, Victorian literature is worthy a place near to the golden fruit of even the great Elizabethans. If the Virgin Queen saw the culmination of the drama under the touch of Shakespeare, Victoria has seen the perfect flowering of the novel at the hands of George Eliot, Thackeray, and Dickens, while in Carlyle, and Ruskin, Grote, Macaulay, and Green, the Victorian era can boast names unmatched in the annals of Elizabeth. Only in one supreme singer of the earlier time need Tennyson, Browning, and Matthew Arnold bow to their master. In art, no less than in letters, is the age of Victoria great. How much richer are British folk in treasures of the brush, how much

advanced in taste, as compared with the time when Millais, Leighton, and Watt had not yet touched the easel; before William Morris and the Pre-Raphaelite band had taken up their parable against commercialism in the studio!

Such thoughts as these are stirring the blood and touching the imagination of men of British race as they turn to the coming pageant at St. Paul's. From Canadian prairies, from the sand-swept plains of Africa, from lonely islands in the far Pacific, from all the line of outposts that girdle the globe from Gibraltar to Halifax and Esquimault, men of Anglo-Saxon blood are looking to London,—to the focus of an empire as much stronger than that of ancient Rome as liberty is stronger than the chain and justice more potent than the sword. In this tide of congratulation the United States need keep no silence. When it threw off the yoke of the third George it but bettered the instruction of that greater king, Cromwell, who declared that kings derive their power only from the just exercise of rule. We have but to glance across the Canadian border to see how, thanks in no small measure to the sturdiness of the thirteen colonies, the colonial policy of England has broadened to both justice and magnanimity.

In language, law and literature, in the institutions which unite order with progress, no less than by ties of kin, the heritage of the United States from Great Britain is too precious for anything short of hearty felicitations on the jubilee of Victoria, the best Queen in history.

GEORGE ILES.

THE FOUNDER OF JOHNS HOPKINS UNIVERSITY

EIGHTY-FIVE years ago, a young man from Anne Arundel County, Md., came to Baltimore to seek his fortune. When he arrived in the city, which sixty years later he was to endow so munificently, he had only seventy-five cents in his pocket. In those early days the opportunity for obtaining an education was very limited even in cities, but in the country there was scarcely any advantages in this respect. Therefore, Johns Hopkins began life with a very modest school education, and he is a striking example of what may be done by energy, economy, industry and perseverance. He was eighteen years old when he left his father's farm, on which he had worked since his twelfth year; but, hard as he had worked in the country, a still harder experience was his during the first years in the city.

Soon after his arrival in Baltimore, he obtained employment in his uncle's wholesale grocery store. The work was laborious, and the salary small; early and late he was at the store, making the fire in the cold winter mornings, running errands, packing goods, collecting bills, receiving and delivering freight, keeping account of stock, helping at the books, etc., for it must be remembered that when Johns Hopkins was a clerk, letter carriers were unknown, steam-heaters undreamed of, and lightning calculators uninvented. The six years that he passed in his uncle's store, while toilsome, were serviceable. They taught him methodical business habits, and thus prepared him for his future career as one of the merchant princes of Baltimore—one of that remarkable trio of benefactors (Peabody, Pratt, and Hopkins), whose enlightened liberality has provided their adopted city with magnificent monuments, in the shape of libraries, a university, and an hospital. Of these three public benefactors of Baltimore, Johns Hopkins was the wealthiest, and founded two of the most splendidly endowed institutions that the world has ever seen: the Johns Hopkins University and the Johns Hopkins Hospital.

When he was twenty-four years old, he opened a grocery store, and continued it with great success for more than a quarter of a century. In 1847, he retired from active business pursuits, and became what is now known as a "capitalist," and practiced to the letter the thrifty advice given by Dr. Franklin in his "Poor Richard's Almanac." It was not repose that he sought; it was not to a future life of idleness to which he retired. He exchanged the counting-room for the office. "No man," says Carlyle, "becomes a saint in his sleep." It was by strenuous, persistent, unceasing work

that Johns Hopkins laid the foundation of his great fortune. It was by systematic economy that his wealth grew so large during the last twenty-five years of his life. He was of the Adam Smith school of political economists, the eminently practical school of Benjamin Franklin. One of the most accomplished Baltimoreans of the passing generation, in his heart of hearts, despised the economy which Dr. Franklin preached in his works and practiced in his life, and in a brilliant oration before the Johns Hopkins University, on the seventh anniversary, while pointing out in eloquent language the importance of the university, did not once mention the name of its founder. This recalls the young society snob in the "Potiphar Papers," who went to Mrs. Potiphar's party, ate her viands and drank her wines, but declined to be introduced to the hostess.

Johns Hopkins loved money. He loved it because it was money, not because it gratified ambition, or brought to his feet the worshippers of the golden calf. He did not agree with the great captain of Spain, Gonsalvo de Cordova, that "there is no mode of enjoying one's property like giving it away." Perhaps Johns Hopkins did not gain his money as easily as the great captain. Certainly the American millionaire pursued money-making eagerly all his life; and what he made he did not give away in private or unknown charities. With a rare genius for making money, he had the rarer capacity for keeping it. He was not a man, like Charles Lamb, who complained of the decay of beggars; nor was he a man, like George Peabody, who gave away millions while in the maturity of a long and useful life. The monks of St. Francis told Rienzi that the purse of our Lord was given to Judas; if it had been meant as a good thing it would have been intrusted to St. Peter. Johns Hopkins believed that money was a "good thing" to have, and he held on to his millions until he was approaching four score, when he conceived the great design of devoting his wealth to founding the university and hospital in the city of Baltimore, which will carry his name to distant ages. His benefaction just escaped becoming "a painted sepulchre of alms," a testamentary bequest.

With his wealth, Johns Hopkins might have been, while living, the first citizen of Baltimore; he might have gathered around him all that was best and brightest in this fair land; he might have been a generous patron of literature and art, and have vied with the merchant princes of Italy in the encouragement of learning as he did in the possession of wealth, and have merited the eloquent praise which Gibbon bestowed upon the Medici. He might have contributed to the bringing about of a condition of affairs in Baltimore, such as Macaulay, in a few brilliant passages, has described as existing in Florence in the fifteenth century. "Knowledge and prosperity continued to advance together. Both attained their meridian in the age of Lorenzo the Magnificent. . . . With peculiar pleasure, every cultivated mind must repose on the fair and glorious Florence, —on the halls which rung with the mirth of Pulci—the cell where twinkled the midnight lamp of Politian, the statues on which the young eyes of Michael Angelo glared with the frenzy of a kindred inspiration, the gardens in which Lorenzo meditated some sparkling song for the May-day dance of the Etrurian virgins.

Johns Hopkins' education had not prepared him for a life of cultured leisure; his tastes did not incline him to seek "wisdom that cometh by opportunity and of leisure;" nor did he care to follow the advice which says "he that hath little business shall become wise." Books, study, thought and meditation did not suit his active mind, or appeal to his practical ideas. From his youth, he had lived in a commercial atmosphere, and been engaged in the engrossing pursuit of gain. Remembering the time when he had not a dollar, he enjoyed seeing his wealth grow day by day, until his thousands became millions, and he lived to be the richest man in Baltimore. "It is not merely the pursuit of gain" some one remarks, "which corrupts—it is its exclusive pursuit—it is the entire surrender of life, and heart and hope to it that transforms wealth from a blessing into a gilded calamity to men and nations." Johns Hopkins lamented that he could not give twenty-five cents to a beggar, but with a stroke of his pen, he gave away seven millions in public benefactions.

Soon after retiring from active business, Johns Hopkins was elected President of the Merchants' Bank of Baltimore, the

largest financial institution in the city. He retained this position until his death, and contributed greatly to its success by his prudent counsel and practical knowledge of finance. Under his wise guidance, the Merchants' Bank weathered the great financial storm of 1857, and entered upon a career of increased prosperity, which was not diminished during the trying time of the Civil War, although at the commencement of that conflict Mr. Hopkins was so depressed at the prospect before the country that he said he would give his whole fortune to any man who would guarantee him a comfortable support for life. But it was not necessary for the financial magnate to resort to this; for during the great war he not only did not lose his fortune, but greatly increased it.

Besides being President of the Merchants' Bank, Mr. Hopkins was a director in many other Baltimore institutions, and was a director in the Baltimore & Ohio Railroad Company. In the latter company, he was the largest individual stockholder, owning seventeen thousand shares. On several critical occasions, he relieved the company from pecuniary embarrassment, notably during the financial panic in the fall of 1873, when he loaned the company $900,000 to enable it to pay its interest in cash.

Johns Hopkins died on the 24th of December, 1873, in the 79th year of his age, and sixty years after he arrived in Baltimore without a dollar in his pocket. His life furnishes a remarkable example of what can be done by a self-made man, and it also shows what can be accomplished by a man with little or no education, who devotes his wealth to the benefit of the human race.

EUGENE L. DIDIER.

GENERAL MONTGOMERY'S INVASION OF CANADA:

A TRAGIC NEW YEAR'S EVE OF THE LONG AGO

THE story of Montgomery's raid has for the American visitor to Quebec much painful interest. The main facts of the assault are familiar to most readers. The frowning fortress rock of the picturesque old city of Champlain tells the tale to everyone who approaches the key of Canada from the sea. In a single sentence Montgomery's fate is proclaimed to all the world. His monument is the great beetling cliff itself.

Death came to the brave soldier as he was leading a division of his troops, between midnight on the 31st of December, 1775, and the morning of January 1, 1776. A blinding snowstorm, one of the severest of the season, was beating in on the town from the northeast, a fact which Montgomery regarded as a good omen, and he made up his mind to act upon the advantage which he thought it would give him. On the land side the defenders of the Canadian garrison had placed lanterns and composition pots, which were kept burning every night, and emitted such a bright light that every object which might present itself was clearly visible. The intrepid commander, aware of this, resolved to make the attack by way of Près-de-Ville, which was then very narrow. Indeed, as Quartermaster-General Thompson, one of Wolfe's old Highlanders, says, in his unpublished diary, "the front of the line of march could present only a few files of men." The British Sergeant, Hugh McQuarters, had charge of the barrier-guard, and a gun loaded with grape and musket balls, under his direction, was always kept mounted, and commanded the slender avenue at the base of the rock. He had strict orders to be ever on the alert, and the slightest noise in the vicinity of his post was the signal agreed upon for the immediate discharge of ordnance.

Montgomery's hope was to carry the place by storm. His force consisted of seven hundred men, all New York troops, and pretty good soldiers. He advanced on Lower Town from the west, along the road between the river and the foot of Cape Diamond, while Benedict Arnold, of infamous memory, had instructions to proceed from the General Hospital by way of St. Charles Street. A junction of the two bodies was to have been made at the lower end of Mountain Street, and together the united force was to push through Prescott Gate. The plan also provided for two feint at-

tacks, which were to be made on the west side, to attract the notice of the garrison. It was a bold, though practicable scheme, but the besiegers relied too much on getting assistance and support from disaffected Canadians within the walls of the city. Such aid, however, was not forthcoming, as Montgomery soon saw, to his surprise and chagrin. Nevertheless, he marched on his way till he reached a narrow defile.

On one side a precipice loomed up riverwards, while on the other a scarped rock reared itself aloft. This was Près-de-Ville, and fortified, as has been described, it barred completely all further approach to the Lower Town. A Canadian militia captain held the post with a force of thirty Canadians and eight British militiamen, and nine English sailors, retained to do the work of artillerymen. Montgomery crept stealthily forward, sure that his movements were unknown to the enemy, and sanguine of achieving success. But his calculations were all astray. The Canadian lookout, active and vigilant, discovered the advancing foe in full march from Wolfe's Cove, and heading directly towards the post. The Canadians were under arms and ready, having been apprised of the projected raid by straggling deserters belonging to the American main body, and they silently awaited the onslaught.

The garrison, meantime, made no movement, even when Montgomery halted his command within fifty yards of the barrier. All was as quiet and still as the grave, and an American officer was observed to leave the brigadier's side, and cautiously approach, as if to ascertain whether the besieged were on the alert or not. He listened for a few seconds, and then, apparently satisfied, hastened back to the little army impatiently awaiting orders to attack. He had not long to wait, for Montgomery and his faithful followers made a wild dash at the double-quick, when to their dismay a flash was seen, and the loud report of a gun vibrated on the air. Another followed, and the advance column of the attacking force was stricken and scattered. For full ten minutes, cannon belched forth and swept everything before it, and above the roar were heard the cries and moans of the wounded and the dying. The narrow defile was soon cleared, for the disheartened soldiers were too astonished to continue the attack, and, having lost in the mêlée their leader, fled incontinently from the scene. Thirteen bodies were afterwards found in the snow, including that of Montgomery's orderly sergeant, who was picked up in a half-conscious state.

When questioned, the latter refused to reveal any tidings regarding his leader, and an hour later the brave fellow died in the guard-room. Shortly after this a party from the garrison was sent out to reconnoitre, when the bodies of General Montgomery and his two aides-de-camp, Cheeseman and McPherson, were found in the snow. The general was lying just above the level, hard frozen, his head and part of the left arm were in an erect position, the body was greatly distorted, and the knees were drawn up towards the head. By his side lay the unsheathed sword found by the drummer boy.

Thompson thus describes the weapon: "It has a head, at the top of the hilt, somewhat resembling a lion's or a bulldog's, with cropt ears, the edges indented, with a ring passing through the chin or under-jaw, from which is suspended a double silver chain communicating with the front tip of the guard by a second ring; at the lower end of the handle there is, on each side, the figure of a spread eagle. The whole of the metal part of the hilt is of silver. About half an inch of the back part of the guard was broken off while in my possession. The handle itself is of ivory, and undulated obliquely from top to bottom. The blade, which is twenty-two inches long, and fluted near the back, is single-edged, with a slight curve towards the point, about six inches of which, however, is sharp on both edges, and the word "Harvey" is imprinted on it, five and a half inches from the top in Roman capitals in a direction upwards. The whole length of the blade is two feet four inches (when found it had no scabbard or sheath, but I soon had the present one made and mounted in silver to correspond)."

Thompson then goes on to state that, finding the general's sword lighter and shorter than his own, he continued to wear it in lieu of the regulation weapon when on duty. Once, while at the Seminary, on some employment connected with his office, he noticed that the

American officers there as prisoners of war recognized the blade as the property of their lamented chief, and were so much affected that some of them wept audibly. "After this," says the old soldier, tenderly, "I took care, in mercy to the feelings of those ill-fated gentlemen, that whenever I had to go to the Seminary afterwards, to leave the sword behind me."

The body of the slain general was taken up and conveyed within the walls, where it was identified by the widow Prentice, the famous landlady of the old Free Masons' Hall, at which renowned hostelry Montgomery had lodged in years gone by. Sir Guy Carleton, afterwards Lord Dorchester, then ordered the body to be decently and privately interred, and Thompson was officially deputed to attend to that duty. The General was duly conveyed to the little log house in St. Louis Street, for many years the resort of all true Americans, but now displaced by a handsome stone dwelling, which, however, still bears the inscription, in simple characters:

THE BODY OF
GENERAL MONTGOMERY,
U. S. ARMY,
WAS LAID OUT
IN THIS HOUSE,
31ST DEC., 1775.

It was owned by François Jaubert, a cooper, and Henry Dunn, a joiner, was ordered to prepare a coffin for the remains. They were carried on the shoulders of six stalwart men to their resting-place at set of sun, on the 4th of January, 1776, and Thompson had them buried alongside the body of his first wife. The spot selected was within and near the surrounding wall of the powder magazine, in the gorge of the St. Louis bastion. The Rev. Mr. De Montmollin, Military Chaplain, performed the last solemn rites at the grave. Thompson marked the place of burial by having a small cut stone inserted in the pavement within the barrack square, and it was fortunate that he did so, for by that means he was, in the year 1818, enabled to identify the spot to a nephew of Montgomery's, a Mr. Lewis, of New York.

In this latter year, Mr. Lewis, having received permission from General Sherbrooke, the British commander at Quebec, accompanied by Thompson, Chief Justice Jonathan Sewell, and some other friends, to the grave of his relative for the purpose of having the tomb opened. Thompson directed the workmen where to dig and the pavement was taken up exactly in the direction of the grave, as the old man who had officiated there so long before, advised. "The skeleton," he writes in his quaint diary, "was found complete, and when removed a musket ball fell from the skull; the coffin nearly decayed. No part of the black cloth of the outside, nor of the flannel of the inside was visible; a leather thong, with which the hair had been tied, was still in a state of preservation after a lapse of 43 years; there was a spring of water near the place which may have had the effect of hastening the decay of the contents of the grave." The remains were carefully removed and taken to New York, where in 1818, they were given sepulture beneath a monument in front of St. Paul's Church, in Lower Broadway. On the main pediment of the monument these words are inscribed: "The State of New York caused the remains of Major-General Richard Montgomery to be conveyed from Quebec and deposited beneath this monument the 8th day of July, 1818." The bones of the two aides-de-camp (Captains Cheeseman and McPherson) were also found. They had been interred just as they were, and without coffins, in a place a little in advance of the spot where the General was buried.

James Thompson, who relates the particulars of Montgomery's assault and death, died at Quebec, full of years and greatly respected. Up to within a short time of his death, he preserved all his faculties. Seventy years of his long life were devoted to the service of his king and country. He left a numerous family. Two of his sons became officers in the Commissariat Department, a third was a judge in Gaspé, Quebec, and a fourth died in Montreal, a senior lieutenant in the Royal Artillery.

General Montgomery's sword is now in the possession of a gentleman living on the banks of the Hudson, a connection by marriage of the Montgomery's, who owns, also, several articles and relics of curious interest and value, which once belonged to the chivalrous brigadier. The blade completes the collection.

GEORGE STEWART, LL. D.

POLITICAL AND SOCIAL PROBLEMS:

THE LABOR QUESTION

THE branches of Economic Science connected with the relations of employers and employed are very interesting and very important, and, like the other branches of Economic Science, they hold at the present day a prominent position in the *curricula* of the Universities. In a country whose institutions are so democratic as the United States they are of even greater importance than elsewhere; for, upon their correct solution depends the reconciliation of opposing classes, which is so essential to the peaceful development of the nation. The continual accessions to our knowledge, combined with inventions and greater mental discipline than has been common in former eras, necessarily produce great changes both in religious belief, in social habits, and in business relations; and these changes in the circumstances surrounding mankind (or, as the phrase now goes, their environment) cause corresponding changes in the minds of men, especially in those of the rising generation who are educated amid the changed environment; and, in this way, one change reacts upon another, so that Progress, as it is called, or rather, Readjustment, becomes necessary.

Such readjustment is often painful for a time to some classes of the community, but its ultimate result is always beneficial, and when the classes who possess power are on the side of this readjustment, it is inevitable. In this country power is vested in the greater number, and readjustments looking to the improvement of the condition of the greater number are therefore inevitable. But they must proceed gradually; and, indeed, they cannot proceed in any other way, because, whatever may be the desire of the few, the majority of mankind are not capable of changing their habits rapidly, and some cannot realize the necessity of making any change at all. The result is that two classes of the community exercise an influence which, in so far as it is successful, is evil — first, the class who would make changes for which the mass of mankind are not prepared, and that without fully understanding the results; and, secondly, the class who, for the purpose of promoting their personal interests, or perhaps from lack of imagination, would endeavor to keep things in their accustomed groove — a course which, when persisted in, always leads to civil war and revolution.

America has hitherto had a very exceptional career, owing to the fact that immense resources capable of being rendered profitable with but little capital were to be found in the Western States, and afforded an outlet for those who could not obtain an outlet elsewhere; but this fortunate state of things is necessarily temporary, and this country is now approaching the condition of European countries, in which some other means must be found for the relief of unemployment and inadequate remuneration than the outlet afforded by gold mining, hunting, and trapping, followed by the cultivation of virgin soils and similar methods so long in use — in a word, it is no longer possible for those who are crowded out of employment to go to a distance, and there, without much capital and without an employer, use for themselves the resources supplied by nature. It is therefor necessary that distress be relieved in some other way, and the consideration of the means by which it may be relieved constitutes the Labor Question.

In this article I narrow myself to the *Economic* of the Labor Question, by which is to be understood the means by which this distress can be relieved or prevented without the necessity of bestowing charity and subjecting the unemployed or underpaid portions of the community to the humiliation of receiving it. A high spirited man revolts from the idea of having thrust upon him as a favor that which he considers himself entitled to as a right, and the problem how to secure as a right the privilege of working and a fair remuneration for that work is one which not only philanthropists but statesmen must solve, on peril of civil broils and their attendant losses.

The subject is a very large one, and I desire to survey it as a whole, in the hope that the result may lead to wiser views being taken concerning it than have sometimes been current. My object is to approach it in a philanthropic spirit, so

far conservative as to be free from sensationalism and from the crude ideas known under the comprehensive term of "faddism," yet so far liberal as not to disguise the fact that changes in the economic structure of society are necessary, and to point out what they ought to be. For, though I hold evolution must progress, I do not hold that it can progress so well or so rapidly without as with conscious guidance. I have said this much to show the importance of the subject to all citizens.

In what follows I propose to go systematically, but, without detail, over the subject, and I may say, in doing so, that, owing to the necessarily narrow limits of an article, I shall not be able to make express references to published works, but the reader may rest assured that these have been carefully studied, and the results, so far as consistent with correct reasoning, will be used throughout the essay.

It must also be pointedly said, that it is a mistake to suppose that the Labor Question is one which interests only manual workers and their employers; although, owing to their greater power of combining, manual workers have come more to the front in it. The causes which press so severely on them press with equal strength on the votaries of intellectual callings also. The evils from which both suffer are the unemployment of many, and the underpayment of many more. In all callings the most successful men, who are presumably the most efficient men, are well paid, and to this rule there is probably no exception. But in many callings there is a very large number who are either unable to obtain employment at all on any terms or unable to obtain a sufficient remuneration to maintain them, or at least unable to obtain a sufficient remuneration to permit the rearing of a family. The evils which flow from such a state of things must be obvious. They include every form of immorality and misery, and, besides, render the unemployed a burthen either upon their relatives or upon the community, while the partially employed, and the underpaid, fall gradually into either vicious living, or ill-health and weakness, or both, and are, at length, carried off by premature death.

In answer to this it has been said that those who fall by the wayside are inefficient, and this statement has in it an element of truth. They are, as a rule (although the rule has exceptions owing to favoritism and personal influence of various kinds), *less* efficient than those who are successful. But they are not *in*efficient, and there are millions of men earning good livings in callings not overcrowded, who, nevertheless, if they had belonged to one of the over-crowded callings, would have been unable to earn anything. And this evil extends equally to the intellectual as to the manual callings. It is true, that in them, the over-crowding is not caused by the introduction of machinery, but rather to the misdirected ambition of young men or of their parents, leading too many to enter into a calling in which the amount of work is necessarily limited; and it is also true that those who follow these callings very frequently possess independent means, and that their unemployment or underpayment does not often produce the same evils as among the manual workers. But the economic causes which operate in the case of the one operate in that of the other also, and, in a scientific point of view, it is impossible to separate them. The remedy of these evils is the legitimate object of the Labor movement; and, in order that it may be successful, it is necessary to ascertain accurately the causes of the evils, for, till that is done, we cannot determine accurately on the remedy.

Now the *immediate* cause is always over-crowding. This over-crowding produces two necessary results. It leaves many men without employment. Secondly, their anxiety to obtain employment leads them to offer to work for trifling wages, and this brings down the wages of the rest so low that it is difficult to keep alive on the amount. The preference which employers show for those who are already in employment is the only cause why wages in such callings are not always at starvation point, or as near it as is compatible with keeping the men in working condition.

Now it can be proved with all the certainty of a mathematical demonstration that there cannot be such a thing as a general over-crowding of all callings; or, in other words, there cannot be a general over-offer of labor-power. Any possible increase of population must increase the number of consumers as much as that of the producers, and, by consequence,

increase the amount of work as much as it increases the number of workers. The result is that there must necessarily be callings which are undermanned, and which, therefore, afford an opening to the unemployed, if competent to do the particular kind of work which these callings require. Some writers have denied this, but all that they have proved is that there may be a general over-crowding in all those callings in which large numbers of men are employed in the machine industries; or, as it is sometimes expressed, "all the *staple* industries of the country;" and this is true, but there cannot be an over-crowding in all callings of every kind. Nor can there be an over-crowding in all those callings which every average man is capable of learning. Some callings require special natural talents, as, for example, that of an artist; and if it were possible that all save these could be simultaneously over-crowded, most men would be as badly off as if all callings were over-crowded. But it can be demonstrated that, in the callings which ordinary men are competent to follow, a general over-crowding is impossible.

The result therefore is, that if the unemployed could discover what callings are undermanned, and could enter them, unemployment could not exist except in a few rare and special cases, and, with the abolition of unemployment, the competition of the unemployed would be removed, and any approach to starvation wages would become impossible. The great object, therefore, must be, to discover a means whereby the questions may be solved;—first, what callings there are which from time to time are undermanned, and, secondly, how can the unemployed be instructed in them. It is a mistake, although a very common one among those who have never had any experience in the matter, to suppose that an unemployed man can obtain employment in another calling than that to which he properly belongs. In order to obtain employment in any calling a man must first learn the particular kind of work which it requires. It is true that unskilled labor forms to some extent an exception to this rule. But as it is possible that there may be overcrowding in some callings, so it is possible that there may be overcrowding in all forms of unskilled labor, and this is actually the fact. The number of persons who, having been thrown out of employment in skilled labor, have been compelled to resort to unskilled labor, is so great, that the various forms of unskilled labor have become over-crowded callings. It is also true that those who employ skilled labor, and who find the supply of the class of labor they require insufficient to meet their demand, may, if they think fit, employ one who is not skilled and teach him the business; but this is rarely done at all, and, when done, is done for the rising generation only; and any payment for instruction would be beyond the reach of the unemployed classes. And this preference for the rising generation extends also to many unskilled callings.

What then is the remedy? I think the only possible remedy is the intervention of the State. The intervention of the State is a bugbear to many. And there is no doubt that the State as at present constituted is liable to the imputation of partiality—from political motives. Nevertheless, the State already does many things. It collects statistics, and there is no reason why it should not add to other statistics the inquiry what callings are overcrowded and what are undermanned. The State is already a large employer of labor, and undertakes to give instruction to those about to enter the military and naval services; and there is no reason why the State should not be able, without any possibility of favoritism, to provide instruction for all who, being without employment, or earning less than a specified wage, should desire to enter one of those callings which had been found to be undermanned. The State might insist that due diligence be shown, and after a time, in the event of the man being found incapable of learning the calling which he had selected, he might be drafted to another. Subject to this restriction, the opportunity should be open to all; and, if open to all, there would be no possibility of jobbery.

While the men were learning these callings it would be necessary that they should be maintained at the State's expense. This seems at first sight as if public burthens were to be increased. The truth is the other way. Unemployed men are now maintained by charity. Some of them are maintained in jails, and some in almshouses, some by the charitable and

some by their relatives. But all are maintained by some one else, and the public is deprived of the services which they might render in return. If the State were to provide them with the means of learning new callings, and to maintain them while doing so, the result would be, that the burthen of their maintenance would be shifted from a section of the public to the whole public, and that instead of being a permanent burthen, they would be a temporary one. There would not be even a temporary loss except the cost of instruction, and there would be a great ultimate gain. Nay, the public actually do, in some instances, discharge this office for convicts in prison, and it is certainly hard that men should be required to qualify by crime for advantages so reasonable and necessary.

It must be admitted, however, that, though the public as a whole would be a gainer by this arrangement, a section of the public would be a loser. Those who employ labor would, when the competition of the unemployed had been taken away, be obliged to pay higher rates than are now current in over-crowded callings. And here is the difficulty, for it is quite possible that self-interest may lead this section of the community to oppose such reforms. But this is just the point where timely concessions are to be reasonably asked for. And it must be remembered that, in proportion as the unemployed are employed, so will the demand for wares of all those kinds which they can afford to use increase. Some economists are of opinion that the greater part of the wares produced are consumed by the working-classes. If this be so, any course which would preserve them from unemployment might be expected to repay to the employers by increase in sales more than it would take away by increase in wages.

But there is also such a thing as a *temporary* depression in business, by which men are thrown out of employment and are afterwards taken on again. These temporary spasms of unemployment are quite different from those which are caused by the introduction of machinery and similar causes, by which men are thrown out of employment permanently. A temporary depression may be caused by unsuccessful speculation on the part of some large banking or other firm, whose bankruptcy may lead to that of other firms, and in this way disable many employers from carrying on business. In such cases it must frequently happen that the goodwill of the enterprises cannot be sold, and then it must stop, and the employees be discharged. Such catastrophes form one of the causes of unemployment, which cannot be guarded against and afford an exception to the rule that employment can be rendered constant. They show that it is essential (if charitable relief is to be avoided) that some other means besides constancy of employment should be discovered whereby wages may be rendered adequate.

Another cause of temporary depressions is over-production or under-consumption, which terms, though they properly have different significations, have been generally used interchangeably. Their causes and effects are, however, the same; and we may use the old word "over-production" to denote both. About the causes of over-production much has been written, and different theories have been suggested; but the only one which commends itself to my judgment is that of David A. Wells, in his work on "Recent Economic Changes," p. 80. He, however, starts with supposing the case of an unexplained depression. That, once assumed, population, and with it the power of consumption, goes on increasing, notwithstanding the diminution of production which has resulted from the depression. Consequently demand exceeds supply — consequently prices rise — consequently manufacturers increase their output — factories are started, and each employer does his utmost to secure to himself as large a share of the increasing demand as possible; knowing, indeed, that the result must be over-production, and that some must consequently fail; but hoping, in his inevitable ignorance of the resources of his rivals, that they will fail before he does, and that he will be the man fortunate enough to get his stock ultimately sold at a satisfactory price.

This risky method of production would not be followed under a system of hand-labor; but, in machine industries, the expenses of keeping mills and other industries idle are sometimes greater than the expenses of keeping them running, because fixed charges, such as rent,

interest, etc., have to be met whether the mill is idle or not, in addition to which, it would seem that machinery deteriorates more rapidly when idle than when in use, and these considerations almost force each manufacturer to hold on, even when running at a loss, until his capital and credit are absolutely exhausted. This system produces vast over-production and a great fall in prices, as well as the bankruptcy of many manufacturers and the dismissal of their work-people, with the result that the supply falls once more below demand, depression again sets in, and the same course is run over again.

The flaw in this theory is that it fails to account for the original depression from which the first over-production is supposed to start. But we are left to infer that at first production continued its even course, while population and even demand, was increasing, and this increase caused at first a small under-production which was followed by an attempt to overtake the demand, creating a small over-production, resulting in a few bankruptcies, and followed by a greater under-production, the alternates between under-production and over-production increasing in intensity as time goes on, until at length they reach the height with which we are familiar in modern times.

But, from whatever cause arising, it does not appear that, in prosperous times, wages should be sufficiently high to admit of wage-earners saving sums sufficient to tide them over the difficulty, and this brings us to the wages question — one of the most vexed in Economics, but one which the student will not find so difficult if he can prevent his intellectual powers from being warped by any sympathy which he may entertain for one or the other of the parties whose interests, though identical up to a certain point, are yet divergent when that point has been passed — namely the employers and employed.

As we have seen that it is not possible, generally speaking, for workers to change from one calling to another; so, the whole body of those engaged in any one calling, or even in any one department of a calling, must be taken as a group by themselves. And even the workers in any given country may to some extent be considered as forming a distinct group from those in another country, for it requires a considerable difference in wages to bring the workers in any one country to another. Now, taking one of these groups, there is a maximum beyond which wages in that group cannot rise, and a minimum below which they cannot permanently fall. There is no minimum below which they cannot fall temporarily, and wages have often fallen to starvation point, but wages cannot very long continue below the point which is necessary to supply the worker with those necessaries which are essential to keep him in working condition; and this, on a broad view of the question, may be considered the minimum. The maximum, when the object of paying the wages is to secure gain, not personal pleasure for the employer, is the amount remaining after other charges incident to the carrying on a business have been deducted from the sum which the employer calculates upon receiving as the price of the product — reckoning, however, among those charges, some profit to the employer himself — such an amount of profit as may, under the circumstances of the case, be sufficient to prevent him from abandoning the enterprise.

The amount of profit requisite for that purpose varies with the circumstances of the case. If the employer is his own manager and is not acquainted with any form of business but the one, he will submit to a heavy deduction from his expected profit rather than abandon the enterprise; while, if he has a hired manager, and is in a position to turn his money to other account, he will require a rate of profit as high as he can obtain in any other way. The question whether he has locked up his money in buildings and plant which cannot be readily disposed of without a sacrifice is also a most material factor in determining how far he will allow his profits to be cut down. And the question whether a large profit is expected in later years is also important; and frequently leads an employer to dispense with all profit, and even submit to an absolute loss, for a time.

Nearer than this we cannot go in determining the maximum of wages. But the point to be borne in mind is this. After the other charges incident to the enterprise have been deducted, as for example, the rent (or cost) of business premises, interest on borrowed capital, petty cash, etc., there remains a surplus which must be divided between the enter-

priser (or employer) and the manager (in cases where he is distinct from the employer), and the employees. And the employees' share of this portion oscillates between the minimum and the maximum to which we have referred.

Now it is in regard to the division of this fund that the interests of the employer and employed are antagonistic. That the parties immediately concerned think them so is evident from the frequent struggles between them respecting the rate of wages, and I think they are correct in this opinion. The wages question consists in endeavoring to determine how this fund should be divided. Under the existing system it is divided according to what is called the law of supply and demand; that is, the ratio between the supply of labor power of the particular kind required and the demand for it, which is very nearly the same thing as the ratio between the number of efficient workers who are seeking employment in the calling in question and the number whose services are required. If the proportion of men following the calling in question and competent to discharge the prescribed duties is so great as to leave a considerable number of them unemployed, then, their competition cuts down wages; if the number of such men is too small to meet the demand, the competition of the employers increases wages; if the number of the one is just equal to that of the other, we may consider the wages normal. But, in all cases, whatever is added to wages must come off profits, and *vice versa*.

The tendency of modern civilization is to make many of the workers in each calling superfluous. We have seen that the introduction of machinery in cases where before it was unused is the most usual cause of this. Alterations in the laws sometimes produce the same effect. I met with a very remarkable instance of this in England some years ago. An act of Parliament, which had rendered unnecessary much of the writing previously done in law offices, had thrown a great number of law clerks out of employment. Sometimes the cause of unemployment is a preference by the employers for boy labor. Printers were wont to complain before the introduction of the linotype that as soon as one boy had finished his apprenticeship he was discharged to make room for another. The pressure of too many persons into a favorite calling is another frequent cause. The influx of immigrants into a country where there is not enough capital accumulated to set them to work, is another cause, which has produced the same result in Australia; for it need hardly be said that there is nothing in the theory propounded by some that men can be set to work without capital and be paid out of the product of their labor.

Other causes might be enumerated, but the result of all is that unemployment takes place and wages come down. Under special circumstances high wages may coexist with high profits; and in the well-known work, "Progress and Poverty," an attempt is made to prove that this is the rule — that in some way high profits cause high wages, or that whatever causes the one causes the other. But this cannot be. If a certain class of product is demanded by the public in quantities exceeding that in which it has yet been produced, its price rises in obedience to the same "law of supply and demand" by which wages are regulated; and, when the price has thus risen without any corresponding increase in the profits of the business, the employer becomes *able* to pay high wages; or, in other words, the maximum to which wages can increase, rises. And if in that state of circumstances the number of workmen competent to do the work in question is too small to meet the increased demand, then wages rise and approach the maximum. But high profits cannot of themselves cause high wages — they can only increase the maximum to which wages *may* attain.

In order that actual wages may be high, it is further necessary that the number of competent workmen of the particular kind required should be too small. And the question has arisen whether, in cases where that number is not too small, an attempt should be made to insure to workmen a respectable maintenance, by bringing some pressure to bear upon employers to induce them to increase wages beyond the level fixed by supply and demand — not to increase them above the maximum which the business allows, but to increase them toward that maximum.

Many expedients have been adopted for that purpose. Strikes and boycotts are among these, and much has been written

respecting their efficiency. A strike generally raises wages if competent unemployed men can be prevented from competing. But, if the employers of two countries are competing in the same branch of manufacture, and are supplying the markets of a third country, a strike, raising the wages of the employees in one of the two countries, may, if it is not accompanied by a similar rise in the wages of the employees in the other country, enable the employers of the latter to undersell the employers of the former in the markets of the third; and (in the absence of a protective tariff and of excessive freight charges), may even enable them to do so in the markets of the country where wages were raised; and, under circumstances, this may somtimes lead to the bankruptcy of the employers who raised wages, and thus throw their employees out of employment. Workmen contemplating a strike have therefore to consider these possibilities.

Arbitration preceded by an attempt at conciliation is another method proposed. The theory is that, if the employers will show their books to the arbitrators or to an accountant agreed upon by all parties, the arbitrators will be able to ascertain the profit, and thus ascertain the maximum to which wages might rise. And then the arbitrators are to exercise their discretion relative to the point at which they will fix wages, and so the losses consequent on a strike may be avoided. Moral influences have also sometimes been relied on to induce employers, when they are making a high profit, to increase wages beyond the sum which the ratio of supply to demand would require them to pay. Some other schemes have been proposed for the same purpose, but they are of a character which is open to debate; and the discussion of each, however honestly and fairly conducted, might seem to some persons like taking a side.

H. W. B. MACKAY.

THE TRANSLATOR OF THE "RUBAIYAT" OF OMAR KHAYYAM:*

LETTERS AND LITERARY REMAINS OF EDWARD FITZGERALD†

WHEN Edward FitzGerald died, in June 1883, only a few people had even heard his name. Indeed the public at large had not had much chance of hearing it. He had published very little; and the private, or semi-private, method of publication he adopted, his retiring temper, which led him, as some one said, to take "more pains to avoid fame than others do to seek it," the subjects his works dealt with, remote from most men's reading, and appealing only to the finer and more curious part of the small public which reads,—all combined to keep him quite unknown. Nor could the dedication of Tennyson's "Tiresias," written just before FitzGerald died, but, as the Epilogue shows, not published till after his death, do much to dissipate this obscurity. In spite of all its cordial friendliness,—in spite of its generous praise of his

> golden Eastern lay,
> Than which I know no version done
> In English more divinely well;—

the tribute scarcely widened the circle of those who knew FitzGerald. The memory of many disappointments is apt to keep the judicious reader from meddling with translations of great poems, and Persian literature is to most men a new field, into which they are shy to break. Tennyson's lines, moreover, because of their enthusiasm, created a suspicion of the partiality of old friendship, and, above all, "Omar Khayyam" was anything but easy to obtain.

So it was that FitzGerald died almost unknown. And yet, observes a writer in the "Quarterly Review," from whose critique this article is condensed, he was not only a personality, but a very delightful personality. He went his own way from the beginning and lived his own life, and the result was an original creation, such as we look rather to find in the great nov-

*The Persian poet and astronomer of the opening years of the 12th century.

†Edited by W. Aldis Wright, M.A. London and New York: The Macmillan Co.

elists than in actual life. No figure could stand out more curiously in our modern English world. Nothing is more old-fashioned nowadays than leisure, and FitzGerald was at leisure all his days. Nor could anything be more old-fashioned than his use of it. His taste was all for old books and old friends, familiar jokes and familiar places. He clung all his life to the dull and dirty Suffolk country in which he was born, just as, at the end of his life, he returned every year, with the advent of spring, to that of his dearly loved Madame de Sévigné. The altars of our great modern idols, bustle and publicity, received no sacrifices from him. Perfectly regardless of time and money and fashion, he stalked his native roads in a strange costume,—in which, however, it is said, he never ceased to have an indefinable look of the *hidalgo* about him,—or pottered in his boat on the sluggish Deben, asking children odd questions, or looking over Crabbe or Calderon. He had a just horror of clever people, and much preferred the stupidity of the country folks to the "impudence of Londoners."

His time was largely passed with his social inferiors,—with the boys who read to him when his eyes began to fail, and who must have been bewildered by his strange sayings and doings; with the bookseller for whose sake he bought books he did not want; or with the "hero" fisherman of Lowestoft, who, "great man" as he was, had a weakness which he could not conquer, and proved, as far as money went, one of FitzGerald's bad speculations. Not that that would have troubled FitzGerald; his generosity was like everything else about him, of the old-fashioned sort, which, though probably not the wisest, is at least the prettiest; free and open, careless of distant results, and very direct and personal in its application. We imagine it to be very possible that he never gave a guinea to a charitable society in his life, but very certain that he gave a great many to unfortunate individuals with whom he came into contact.

Altogether it was a strange existence, with something about it that may well make us pause in our fussy self-importance. Carlyle saw in it only a peaceable, affectionate, ultra-modest man, "and an innocent *far niente* life"; but after all, for a man to have made himself "peaceable, affectionate, and ultra-modest," is to have done something, and something which to his neighbors is of far more value than many more shining performances. Perhaps, too, we are apt nowadays to undervalue the higher sort of innocency, and to forget that there is old authority for the doctrine that it is just innocence which "brings a man peace at the last," and that another authority, still higher if not quite so old, makes "pure religion" itself consist in two things, one of which is keeping "unspotted from the world."

Besides, from a humbler point of view, or indeed from any point of view whatever, manliness and cheerfulness, generosity and gentleness and pure unadulterated simplicity, must always be things worth having. Even if "the world's coarse thumb" asks as usual for results more material and tangible, the attainment of such graces will always redeem a life like FitzGerald's from the charge of having been wasted and useless. Any such charge is, however, absurd enough, apart from these considerations; for the translator of "Omar Khayyam" is assuredly not without his "proper reason for existing."

A life like FitzGerald's has no story. He was born at Bredfield, near Woodbridge, in 1809. The chief recollection he seems to have retained of his childhood was the rather terrible if very splendid figure of his mother, a great lady who used to astonish the neighborhood with her coach and four, and who seems to have had a great lady's temper. He went to school at Bury St. Edmund's, where he began his long friendships with William Donne, who was after Censor of Plays, and with Spedding, the editor of Bacon. It was at Cambridge that he made the acquaintance of Thackeray, who spoke affectionately of him on his deathbed, and of Thompson, afterwards Master of Trinity, FitzGerald's college.

FitzGerald followed no profession after taking his degree. Till 1853, though he often shifted his quarters, he lived mainly in a thatched cottage at Boulge, near Woodbridge, just outside the gate of his brother's place, Boulge Hall. He was in lodgings in Woodbridge from 1860 to 1874, when he settled in a small house of his own outside the town, named, by command of some lady who visited him, Little Grange. And "Laird of Little Grange," as he liked to sign himself, he

remained till he died, quite suddenly, in June 1883. He is buried in Boulge churchyard; and a rose, the daughter of one that grows on Omar Khayyam's tomb, has been planted over his grave. The text on the stone, "It is He that hath made us, and not we ourselves," was his own choice.

The little he wrote was all published anonymously, except "Six Dramas of Calderon" in 1853. He prefixed a memoir to an edition of the poems of his friend Bernard Barton, the Quaker poet of Woodbridge, in 1849. Two years later he printed the remarkable dialogue "Euphranor." "Polonius" appeared in 1852; a rendering of the "Agamemnon," parts of which are unequalled, was published in 1876; and four editions of his translation of "Omar Khayyam" came out before his death, the first appearing in 1859, without gaining any immediate recognition. The other Persian translations were left in manuscript, and only appeared in Mr. Aldis Wright's edition of his "Literary Remains," 1889. He was a man of many and notable friendships, chiefly kept up by interchange of letters. Those friendships that date from Bury and Cambridge have been given; others that followed, to be extinguished only by death, united him to Alfred Tennyson and Frederic Tennyson, Carlyle, and Carlyle's friend and editor, Norton; Barton, the poet, and Lawrence, the painter; to Sir Frederick Pollock, Lowell, two Crabbes, son and grandson of his favorite poet; to Archbishop Trench, Professor Cowell, who led him to read Persian, and Mr. Aldis Wright, whom he appointed his literary executor.

It used to be said that a man is known by his friends. If that be so, the world which knows his friends so well has no need of an introduction to FitzGerald. The companion of men like these was certainly no ordinary man, either in heart or head. Nor would it be possible to keep on writing dull letters to such men for forty years. FitzGerald's letters then, we know beforehand, are not dull. In fact they are among the best in the language, and it is likely enough that they will find more readers than "Omar Khayyam"; though, no doubt, but for "Omar Khayyam," we should never have heard of them.

Letters show the man, and we have FitzGerald here set out before us, just as he was, in all his kindliness and humor, in all his fine and acute perception of true and false in art and literature, in his love of all that is truly lovable, in his queer ways and whims, even in his weaknesses. A man with his tastes could not write to such men as those to whom his letters went without often talking of things, books, and pictures, and music, for instance, that are not likely to be soon forgotten; and of things, too, whose interest is everlasting, the spring and the birds and the sea. On such subjects as these, his letters are full of good sayings, sayings with the personal mark upon them, fresh and worth the utterance, if often in substance very old. Indeed, there is something one would like to quote on almost every page; and it would not be hard to make a large volume of extracts from them, on the Book of Beauties principle, which, detestable as it assuredly would be as a book, would yet contain nothing unworthy of insertion.

Hundreds of new books appear every week, and it is for the reviewer to warn the public against those which are not worth reading, and to introduce to the public those which are. But he has a third duty, certainly not less important, to do with regard to old books, one which has been the special delight of all the great critics. He has to call the public back, from time to time, to old friends whom it might otherwise forget. The first duty or the second has been often only a pleasant excuse for the third. Sainte-Beuve will write on a new edition of Molière or La Fontaine, and Matthew Arnold will review a new translation of Marcus Aurelius, not because they want to praise or blame the new edition, but because they want, and want very much, to fetch down Molière and Marcus Aurelius from that upper shelf on which forgetful or ungrateful people are too apt leave them.

So, in this case of Edward FitzGerald, we have a little of two duties to do. Nothing assuredly of the first we spoke of, the business of warning; but something of the second, for there is a new volume of FitzGerald's Letters, those to Fanny Kemble, just reprinted from "Temple Bar"; and, as the third duty, there are the old letters, and the old friends, whom the public has known, or

ought to have known, long ago, to recall to all our memories again.

There are a dozen ways in which this might be done. However, in FitzGerald's case, it is not what he did or wrote that we want so much to remember, but what he was. It is as a personality even more than as a poet that we think of him. When we are calling an old friend to mind, the best way of bringing him before us again as he was, is to think of the things he cared most about. So there will be no better way of getting at the living picture of FitzGerald than by hearing him talk of some of the things that gave him most pleasure.

And first, of music. There was nothing he cared for more. His taste in it was, like all his taste, a little old-fashioned, for he preferred melody to harmony, and Italian music to German. He was himself always fond of singing, from the Cambridge days when Thackeray and he sang together, to those later on when he would "trudge through the mud" of an evening to Bredfield Vicarage and go through one of Handel's Coronation Anthems with Crabbe, his poet's son.

"With not a voice among us," as he says; "laughable it may seem, yet it is not quite so; the things are so well-defined, simple, and grand, that the faintest outline of them tells; my admiration of the old Giant grows and grows; his is the Music for a Great, Active, People. . . .

"Sometimes too, I go over to a place elegantly called *Bungay*, where a Printer lives who drills the young folks of a manufactory there to sing in Chorus once a week. . . . They sing some of the English Madrigals, some of Purcell, and some of Handel, in a way to satisfy me, who believe that the *grandest* things do not depend on delicate finish. If you were here now, we would go over and hear the "Harmonious Blacksmith" sung in Chorus, with words, of course. It almost made me cry when I heard the divine Air rolled into vocal harmony from the four corners of a large Hall."

That was the music he loved, and could keep up in the country, the old English music and Handel; but he did not stop there. Indeed he preferred Mozart to Handel, who, he says, "never gets out of his wig." He admired Beethoven: "The finale of C minor is very noble," but "Beethoven is gloomy"; and, as he said of poetry, FitzGerald admitted nothing into his Paradise "but such as breathe content and virtue." He detested Wagner, and in Bizet's "Carmen" he saw nothing but "very beautiful accompaniments to no melody," which, after all, is more than many quite sane people saw in it at first. He thought indeed that in French music as in "all French things" there was an absence of the "Holy of Holies far withdrawn." Beethoven, on the other hand, he quite felt was "original, majestic, and profound," with "a depth not to be reached all at once." But perhaps he was,

strictly speaking, more of a thinker than a musician. A great genius he was somehow. . . . He tried to think in music; almost to reason in music; whereas, perhaps, we should be contented with *feeling* in it. It can never speak very definitely. There is that famous "Holy, Holy, Lord God Almighty," etc., in Handel; nothing can sound more simple and devotional; but it is only lately adapted to these words, being originally (I believe) a love song in "Rodelinda." Then the famous music of "He layeth the beams of his chambers in the waters," etc., was originally fitted to an Italian pastoral song — "Nasce al bosco in rozza cuna, un felice pastorello, etc." That part which seems so well to describe "and walketh on the wings of the wind" falls happily in with "e con l' aura di fortuna" with which this pastorello sailed along. The character of the music is ease and largeness; as the shepherd lived, so God Almighty walked on the wind. . . . Music is so far the most universal language, that any one piece in a particular strain symbolizes all the analogous phenomena, spiritual or material — if you can talk of spiritual phenomena.

Therefore "it can never speak very definitely"; and, in part, at least for that reason, Mozart is "incontestably the purest Musician; Beethoven would have been Poet or Painter as well." He believed as much in Mozart's power as in his beauty.

People cannot believe that Mozart is *powerful*, because he is so Beautiful; in the same way as it requires a very practiced eye (more than I possess) to recognize the consummate power predominating in the tranquil Beauty of Greek sculpture.

Perhaps this is not all true, and certainly it is not all new; but everyone will admit that FitzGerald's firmness and terseness are qualities not invariably found in musical criticism.

But music, after all, gives us only a side-light on FitzGerald's character. It is what he says about books that must supply the central light of the picture. He may be said to have spent his life in enjoying nature and friendship and good books. As friends died or grew too old to visit or be visited, and as nature, with increasing age, came more and more to mean his strip of garden "quarter-deck," books became during the last years of his life almost his sole companions.

Fifty years spent in their society naturally made him a very good judge of them. His tastes were his own, and he would not always try to give a reason for them.

He could not tolerate the "problem" literature, with which the last two generations have been deluged. The novel or play which has for its backbone a discussion of the religious question, or the marriage question, or the social question, would, of course, have been more than intolerable to him. Literature in fact for him, although he would not have put it in that way, was a fine art, and could have no end beyond itself. He not only abhorred all books with a purpose, but the whole literature of "storm and stress," all striving and crying in the literary market-place.

He never succeeded in reading George Eliot, nor did repeated efforts carry him through any of the translations of "Faust." We may agree or disagree, but his position is, at any rate, clear enough. He could not open his eyes in an atmosphere of confusion or negation, and therefore he never saw the things that are really great in "Faust." And the things that most interested George Eliot were simply tiresome to FitzGerald. He asked of his favorites ease, serenity, lightness of touch, some indulgence for human follies and frailties, simplicity and directness, a store of humor to light up the way, and a large humanity to smooth it. *Non omnes omnia*, of course, but authors so entirely without most of these qualities, as Goethe and George Eliot, or again, Browning, could never be among his friends. The serene and wise old man of Eckermann's "Conversations," almost as repeatedly to be read as Boswell's "Johnson," he did indeed, know and like, and he must, it may be thought, have appreciated the poet of the shorter poems if he had known them; but the troubled and self-conscious author of "Faust" or "Meister" did not appeal to him. Goethe is, in fact, inclined to pose a little, as George Eliot is a little inclined to preach, and neither habit was much to FitzGerald's taste.

His special favorites, then, were Cervantes and Scott, and Madame de Sévigné and Montaigne, that old delightful humor, in fact, which only overlaid a ground of seriousness always present underneath. For that is the real difference between the old humor, which felt so deeply for our *pauvre et triste humanité*, and the new, which only sneers at it with bitter heartlessness, or sits down with pleasure to the spectacle of its calamities. To FitzGerald's friends and favorites, life, whatever else it was, was always a thing of infinite meaning. Nor did he always ask that it should be seen with the eye of humor. To "see it steadily and see it whole," as Sophocles and Shakespeare did, was in itself a sure passport to his love; and to see it as Dante or Æschylus saw it, blazing in the light cast by a grand and daring imagination, and yet deal with it under the restrictions of consummate art, secured at once his enthusiastic admiration. He was not afraid, indeed, of the old problems, provided they were treated in the old way,—the Æschylean way of awe and reverence, the Sophoclean way of quietness and confidence, Dante's way of assured serenity of faith. These high matters, he would no doubt have said, were not things to talk much about, certainly not to be contentious or querulous about; the fit place for them is not the tongue, not even perhaps altogether the head, but something deeper down, the mysterious recesses of the heart, where they find such solution as may be, or, what is sometimes best of all, no other solution but that of silence.

This was what he cared about, then: literature in the sense which is at once the plainest and the highest; the thing in itself; not bricks and straw for building moral or political edifices, but the very picture of our common humanity, a food on which men can live, raised on the good soil of life itself. Politics he hated: "Dont write politics," he says to Frederic Tennyson; "I agree with you beforehand." Even for history he cared very little; "never having read any history but Herodotus, I believe;" though the statement is not literally true—for we find him reading Thucydides and Tacitus—history, as a rule, dealt too much with politics, which for him were comparatively so transient and external, and dwelt too little on the permanent things in our nature, which lie below untouched by any change, and remain substantially the same in all ages and countries. The one exception that he made is readily understood. He liked Herodotus for his presentment of man face to face with the unchanging destinies, his

study of old ways and old tales, and the humor which he may not have meant, but which we cannot help finding in him.

But let us hear him talk of some of his favorites, and first of novelists: from Boccaccio, by whose help, as he tells Mrs. Kemble in October 1876, he "makes a kind of summer in his room" at Lowestoft; to Dickens, whom, in spite of faults, he "must look on as a mighty Benefactor to Mankind; a little Shakespeare — a Cockney Shakespeare, if you will; but as distinct, if not so great, a piece of pure Genius as was born in Stratford." He even wished "to go and worship at Gadshill," as "I have worshipped at Abbotsford, though with less reverence, to be sure." There are very few in the long line of whom he has not something to say. He never tired of 'Don Quixote,' which he thought "the most delightful of all books:" "I have had Don Quixote, Boccaccio, and my dear Sophocles (once more) for company on board, the first of these was so delightful that I got to love the very dictionary in which I had to look out the words." "Gil Blas" he could not read; no doubt because of the formal resemblance to his favorite Don, which forces into plainful prominence the contrast between the essential vulgarity of Le Sage's hero and the perfect gentlemen created by Cervantes.

He preferred Richardson to Fielding, and was particularly fond of Clarissa, of which he quotes Tennyson as saying, "I love those large, *still* books." To Miss Austen he objected that "she never goes out of the parlor," but admitted that he thought her "quite capital in a circle I have found quite unendurable to walk in." Trollope is, for him, "not perfect, like Miss Austen, but then so much wider scope." Of some other novels of modern day, he well complains that they "are painfully microscopic and elaborate on dismal subjects." Scott alone he thought worthy to stand with Cervantes, and he is justly indignant with Carlyle for wanting to set up "such a cantankerous, narrow-minded bigot as John Knox," as Scotland's national hero in Sir Walter's stead. No one ever loved Scott more or better than FitzGerald did; the man, if possible, more than the writer. He liked his men of letters to be men of action too, and he was one of those to whom the thought of Scott and Shakespeare, active in business, public and private, is only less pleasing than that of Æschylus at Marathon.

Scott, in fact, was man of exactly the type which always won his affections,— large and generous, absolutely modest and unpretending, not merely a perfect gentleman, but what he called "*a man*." He was very fond, too, of a few of the great writers of letters, those other novelists who fill their galleries with living portraits instead of fictitious; Cowper, whom he knew in Southey's Life, and Walpole, whose letters he puts with Cowper's as the best in the language: "I can scarce imagine better Christmas fare," he says, and "I think I could show you that he had a very loving heart for a few, and a very firm, just understanding, under all his wit and fun. Even Carlyle has admitted that he was about the clearest-sighted man of his time."

All these were intimate friends, to be enjoyed on a footing of easy equality. But he spent as much time perhaps in the society of higher people, with whom none of us may dare to be familiar, so that even he, poet as he was, and himself the frankest of men, not apt to be daunted by great names, confesses to reading Milton "with wonder and a sort of awe." Elsewhere, also, he has a fine saying, too easily missed from its simplicity: "I take pleasure in reading things I don't wholly understand; just as the old women like sermons: I think it is of a piece with an admiration of all Nature around us."

The greater poets were constantly in his hands, as may be seen everywhere in his letters; and it is on what he did for them that his fame must chiefly rest. He believed in translations, and wished Tennyson to devote "his diminished powers to translating Sophocles or Æschylus, as I fancy a poet should do — *one* work, at any rate, of his great predecessors"; he thought the many failures were due to want of freedom, and that if translators "would not hamper themselves with forms of verse, and thought, irreconcilable with English language and English ways of thinking," they would succeed very well, and he went far to prove it by his own success. He did not pretend, as he was always modestly saying, to genius but to taste; and his judgment very rarely lost its way.

For most of the poets of his own day

he cared little: he detested Browning and Swinburne; Shelley, as one would expect, he found "too unsubstantial" for him; at Wordsworth he is always laughing, and then repenting before one of "those unique things of his, which he brought from the mountains." He appreciated Keats much more fully, "more akin to Shakespeare, I am tempted to think, in a perfect circle of poetic faculties than any poet since."

"My dear Virgil"; "my dear Sophocles"; "one loves Virgil somehow": that is the way he speaks of the great ancients. He had the instinct for perfection in these things; and those who have that must always look — in these days of "new" criticism it has become necessary to repeat it — to that small band, of the every elect out of every nation, to which Greece furnished the largest contribution. Not that he seems to have returned much to some of the great Greek poets. For him Greek poetry meant chiefly Æschylus and Sophocles: Æschylus, "a dozen lines of whom have a more almighty power on me than all Sophocles' plays;" but Sophocles as well, in that he does not, like Æschylus, "*trouble* us with his grandeur and gloom," but is "always soothing, complete, and satisfactory," "the consummation of Greek art."

FitzGerald was not so occupied with books as to be unable to find plenty of time for Nature and his friends. He, however, knew by instinct the life that suited him, and had the wisdom to refuse to be turned aside from it. If any justification were needed, "Omar" and "Agamemnon" and "Euphranor" and the charming letters, the record of delightful studies, and the picture of a beautiful character, would be more than enough. Of course he might have enjoyed any society he liked, in London or Suffolk; but he hated seeing new faces in "the polite circles," and much preferred Parson Crabbe coming to spend an evening with him, with a bottle of port under his arm. Of social distinctions he made nothing; he was quite at home among the Woodbridge people, and would go and dine with a carpenter. His early ideal was very much what he attained to: "a small house just outside a pleasant English town, all the days of my life, making myself useful in a humble way, reading my books, and playing a rubber of whist at night. For all which idle ease I think I must be damned."

But we must make an end of quotations, and leave a hundred bits of humor or poetry, unseen or seen only in a momentary glance. These and much else we must leave, only hoping that we have quoted enough to make all who care for good sense and good English, heightened often by a dash of poetry, go and search these charming letters for themselves.

Good as FitzGerald's letters are, he will not, we think, quite take equal rank with our three or four classical English letter-writers. To be a classic of any kind style is needed,— style not only of occasional perfection, such as is to be found in these letters, but assured, sustained, unfailing, such as Gray and Lamb knew how to use in their letters; such, above all, as Cowper, without ceasing for one moment to be natural and simple, had always at command. Ease and naturalness are the first of qualities in a writer of letters; but they can be pushed too far, at least in letters that come to be published. There is just too much of the odd, and the interjectional, and the spasmodic about them to let them strike our ears with quite the same note of perfection which sounds in Cowper's Letter's, or Gray's.

But when that has been said, all is said. No one could write better English than FitzGerald, when he chose, as "Euphranor" proves; and there are a thousand things in these letters to prove it, too. It is only as a whole that he need yield to anyone, and then only to the very best. And, after all, the chief interest of letters lies in the personality they reveal; and to many tastes that of FitzGerald, racier and richer than Cowper, easier than Gray, larger than Lamb, will prove a rare, or even a unique, attraction. No one, at any rate, can altogether miss his charm: so cheerful as he is and so kindly, so absolutely healthy and human and genuine, a man made up of good blood and bone within, and fresh English air from land and sea without, whose friendships were "like loves," and extended not only to men and women, but to beasts and birds and flowers.

In this last point, as in a hundred others, he has again and again reminded us of a French poet whom, curiously enough, he did not like, La Fontaine. FitzGerald's taste in literature was for

the large and easy style of Scott and Cervantes; and La Fontaine's gift of delicate and detailed perfection was, in the main, lost upon him. But it is strange that he felt no touch of affinity for the man whose friendships had the rare depth and Roman constancy of his own; who chose, like himself, from the first to stand apart from the crowd, and watch and dream and judge instead of acting; whose interviews with lawyers were as tiresome and fruitless as his; whose poetic sympathies saw, as he did, life and feeling everywhere, and who could be happiest, as he was, in a world peopled only by trees and birds. No one indeed could quite say of La Fontaine, what was said of FitzGerald when he died: "A very noble character has passed away." But FitzGerald was no harsh judge of human sins or frailties; and in the Elysian fields at least let us hope that they have become acquainted, and enjoy together there the delight of dreaming out long summer days, which each loved so well when he breathed earthly air above.

SOCIAL LAWS AND CUSTOMS:

A PAPER FOR WOMEN'S CLUBS

THE defects in our social laws and customs often invite the criticism of foreigners, who are indifferent to the evils of their own systems which strike us forcibly. The exceeding familiarity and want of restraint in the social intercourse of young people especially attracts their attention, and subjects them to spasms of righteous indignation, which is not to be wondered at when we consider the stringent regulations in regard to the mingling of young people in society on the other side of the water. We go to one extreme, the extreme of laxity; they go to the other, that of stringency and rigidity. If both were to take the happy mean, the millennium of society would be nearer.

The European protects and guards his daughter most carefully; marries her to a man he selects for her with great forethought; provides her with a dower; sees that the marriage contract is properly drawn up, so that her rights will be recognized; gives her his blessing; then with the peaceful mind of a man who has fulfilled his whole duty, returns to the usual routine of life, satisfied that his daughter is for life provided for. It has been a purely business transaction throughout; sentiment is but little considered. Strange to say, the daughter is generally satisfied also, novels and romances to the contrary notwithstanding. She looks upon the position and independence of a married woman as a very desirable thing, and is not more afflicted than is her parent with any sentiment on the subject.

The marriages thus made with a careful provision for the future are more apt to turn out happily than most of the marriages made with us, based on sentiment, without any provision for bread, even without butter.

The American father is engrossed in business; he thinks his daughter a very lovely girl, but knows very little about her; gives her everything in the way of money and dress, generally more than he can afford; lets her do as her mother pleases, which in most cases means as the young girl herself pleases. When he thinks she is just out of school, a young man comes along and says, "I love Molly and Molly loves me; can I wed her?" The father is scarcely acquainted with the young man, does not like him particularly any way, but they "love each other," that settles it, and he consents. Few questions are asked as to the ability of the young man to support a wife; no marriage contract is drawn up; no dower provided for Molly; but there is a "swell" wedding, which not seldom leaves the family an almost financial wreck.

In a short time the daughter — very often her husband also — returns home and the "old man" supports them both for awhile. This, getting irksome, the young people make a new start; next time Molly comes home alone. Marriage has proved a failure. The husband has failed to support her, and now she wants a divorce.

In these two extremes, the purely business method and the purely sentimental, there are ten chances to one that the

purely business method will turn out the better, and bring the greater happiness, peace and comfort; though neither of the two ways is to be specially advocated.

Although Americans are a money-making people and worship the golden calf, they are very sentimental in spite of all. This sentimentalism, though it leads to much foolishness, is the redeeming trait, and prevents their becoming sordid, and, if regulated by common sense and prudence, beautifies and ennobles their lives.

There is no excuse, however, for the hasty and imprudent marriages, or for the carelessness of fathers in allowing their daughters to be launched on the sea of matrimony without any provision for the future. It will be hard to convince the overworked and down-trodden fathers of America that they are responsible for the way their daughters marry, and ought to see to it that each is married with a reasonable expectation of support, and provided with a dower. Doubtless he would groan at the idea of a dower, yet he often spends for her and allows her to spend needlessly before her marriage, in extravagant dress and other nonsense, enough to give her sufficient dower to insure her from want, perhaps for life.

To the mothers belong an equally serious responsibility, and we look to them to pay more careful regard to the social laws and customs that regulate young people in society — to enforce and teach them to follow a course that will engender respect for themselves, and honor and honesty in dealing with each other, which will greatly enhance the character of both, and save them from much unhappiness before and after marriage.

"Daisy Miller" is not an exaggerated picture of the unlimited freedom and unconventional manners of an American girl. There are thousands of girls in the United States to-day who, on reading "Daisy Miller," would see no impropriety in the heroine's conduct, and miss the point of the story, if, indeed, they would not think it rather stupid, for without the motive being understood the story is not much in itself.

With few exceptions the young women of America are allowed to follow their own sweet wills, untramelled by conventional rules, and their good hearts and untutored sense of propriety do not always save them. A young girl enters the social arena plumed for conquest. She is allowed to accept invitations to parties, theatres, bicycle rides, drives, or picnics, from any eligible, often ineligible, young man who invites her, and to accompany him to these places with or without a chaperon. She counts her invitations and her beaux as an Indian warrior was wont to count his scalps, and with the same air of triumph. Once in awhile some hapless youth offers his heart and hand, believing that as she has accepted his attentions for six months or a year, she will accept him for life. She coolly informs him she cannot marry him, but consoles him by saying she will "always be his friend." He does not want a friend; he wants a wife.

Naturally, after such a repulse, the young man feels defrauded. He has been fooled. She has used him merely as a tool to get theatre tickets, carriages to parties, flowers and candy, for her own gratification. When he comes to his senses he counts the cost, and naturally feels aggrieved, if not bitter. This proceeding lacks common honesty. The young woman knew quite well, however much she may disguise it to herself or others, what the young man meant by his attentions, and what the outcome would be; but she evidently thinks it quite right, however immoral the act, to get all she could by false pretenses. In this the self-respect of both parties suffers.

Take the other side: A charming young man, holding a responsible position, and generally respected, is introduced to some lovely girl, pays her assiduous attention, which she receives gladly. For a year, perhaps, they are seen constantly together, then another pretty girl attracts his fickle heart. With still ardent professions of friendship, he gradually ceases his attentions to lovely girl number one, and addresses pretty girl number two. Think of the bitter mortification number one has to endure! She feels that the young man has behaved dishonorably. He won her smiles and her heart by false pretenses. Her pride sustains her so far that she puts on a brave face before the world. But the outrage has been committed and the wrong is unpardonable. The proceeding lacks common honor and honesty.

These things which are tolerated, and, it may be, laughed at, happen every day. For either case there is no redress,

because as a nation we are untrained and inchoate; our social system is not as yet organized by unwritten conventional and social law, as binding as civil law, the breaking of which should be followed by penalties of their own kind. We do not teach young men honor or young women honesty in dealing with each other.

It is not drawing the reins one jot too stiffly when we lay down as a rule, that no young girl should be allowed to accept attention or presents from a young man unless she is engaged to him. Every young girl in the country will enter a protest against this; but it is "good form," and in time, as civilization and enlightenment progress, we shall come to it. Mothers ask: "Under such a rule how will a young girl become acquainted with any young man well enough to know whether she likes him or not?" There are plenty of ways for young people to meet. The young woman can go to parties, theatres and other places with her chaperon. The young man can meet her there, he can call on her at her home. Opportunities of meeting and getting acquainted are numerous enough and, whatever the outcome, no one's pride or self-respect need be wounded. Neither could accuse the other of a want of honor or honesty. The young man could not reproach the maiden for accepting attentions under false pretenses; the maiden could not feel herself jilted when she had not been compromised in any way. These considerations may seem trifling to some minds; but they are trifles that have great weight in character-making.

These regulations would not interfere with any sensible friendships a girl might form with young men at school, at college, or in society. It would only make these friendships more real and disinterested, reserving for a lover those attentions and privileges which belong to a lover, and forbid their being bestowed indiscriminately on every man who happens to come along. It places no ban on the association of young men and women at college, in society, or in business life. It puts the association under proper limitations and on self-respecting principle. No doubt it will be difficult to get the mothers of America to consider this matter in the light of a duty; they were brought up to consider our free and easy ways all right; and it will be hard for them to be more conventional with their daughters in regard to their conduct; but the wisdom and advantage of wise regulations in social matters will grow upon us; we shall come to it all in the end. Heretofore we have had to struggle with more serious matters, as in all new countries, with, indeed, the very means of existence. Society, manners, and all that pertained to them, were left to get on the best way they could, haphazard; conventionalities were scouted. The looseness of our manners and customs has induced looseness of morals, so that now conventional uses and wise social regulations must step in and save us, as in all countries of older civilization. We have gloried in our liberty, but liberty is not license.

Being more enlightened than the older civilized nations, it is to be hoped that we can unite liberty and social law to the highest individual development.

It may be that the young women of this *fin de siècle* generation will scorn these suggestions as ridiculous, old-fashioned, prudish; but, when they gain in experience and reflection, they will see the propriety of them and when they have daughters of their own will enforce them. We educate this generation for the benefit of the next. Any young woman who wants to be true to herself, who is an earnest woman seeking what is best for herself and others, will be willing to sacrifice the gratification of her vanity by the aimless attentions of young men to the more solid satisfaction of her own respect and theirs. A young woman may enter college, competing with young men for the higher education, may enter business life in any profession she chooses to take up, and always preserve her dignity and womanliness; but not if she receives attentions in the careless, unguarded way American girls do now from any man who chooses to offer them.

When we instil into the minds of our young women clearer notions of good conduct and propriety we shall have taken a long step ahead.

This is not a subject for state legislation, the mothers and daughters of the land are the court before whom this case must be tried and from whose decision there is no appeal. Even the subject of a dower is in a measure in their hands. They lead the way in American extravagance; they must lead the way in social reform.

CALEB CLARK.

THE NEGRO AS A SLAVE AND A FREEMAN:

FIRST PAPER—THE SLAVE.

NOW that Slavery has been forever abolished in this country, there is no reason why we should not look at the subject dispassionately and consider it in its more important details. It is quite necessary that we do so if we want to understand our past history aright, for this institution had more lasting effects on our politics than almost any other.

There will be found few persons now who will defend human slavery, but we must not forget that a generation ago there were several millions of people in this country who not only defended it but claimed the authority of God for so doing. They must have had some reasons for this, and though we now believe their reasons were bad, we can, at least, respect the opinions of people who fought so long to establish a government on "the cornerstone of slavery." It cannot be denied that some of the best Christian men in the country defended slavery and practiced it, and there must have been some aspects of the institution that were not altogether bad, else so many slaves would not have stayed by their mistresses during the war while their masters went forth to fight practically to keep them in slavery. I do not mean by this to say that slavery was right. It was a great evil, but there were some aspects of it that were not altogether unsatisfactory to the slaves themselves.

Origin of Slavery in America

Slaves were introduced into this country early in the colonial history of Virginia much against the will of the people of the colony. At that time there was little moral sentiment on the subject anywhere. It was common for a victorious nation to enslave some of its conquered foes, and this was not confined to the black race. As far back as history goes, might was considered to make right in this respect, but as civilization progressed it was the custom only to enslave barbarous or semi-barbarous peoples. In the seventeenth century, however, slavery was dying out in most of the civilized world. It was not found profitable, except under certain circumstances. It was difficult to keep white slaves when there were so many chances of escape, and gradually black men became the chief objects of slave-hunters and these were used principally in the colonies as there was little chance for them in thickly-settled Europe. When slaves were hard to purchase in the market, recourse was had to the wilds of Africa. The natives were captured wherever possible and forcibly carried off to the colonies.

This action was excused on the ground that it was much better for them to be slaves where they would get a chance to be Christians than to live and die as heathen. Probably this did not appeal very forcibly to the negroes themselves but they were not consulted. As the American colonies grew they offered a fine field for selling slaves and the colonists were compelled to take them. Queen Elizabeth made fine pocket money in this way. There were slaves in all of the colonies, but, at the time of the adoption of the Declaration of Independence, Massachusetts had provided for emancipation, and, by the beginning of this century, all of the states north of Maryland had done the same. It must not be assumed that this action was taken on moral grounds alone. If slavery had been as profitable in the North as it was in the South it might have endured to this day. But slavery was not profitable in the North, nor was it profitable, on the whole, in the South.

Slavery in the Constitution

In the Constitutional Convention of 1787 the subject was gravely discussed in all its aspects. It was agreed by the majority of the delegates that it was an evil institution, not so much morally as socially and economically. This was not alone the Northern view. The leading men of Virginia, although most of them were slaveholders, objected to the institution. Washington, Henry, Jefferson, and others, were anxious that provision be made for gradual emancipation. Washington freed his slaves by will, and this was not uncommon, but it was not found to be entirely satisfactory. As freemen the slaves often found it difficult to get

along in the world. They were not citizens, and in time State laws circumscribed their movements greatly. Curiously enough, they were not always well treated by slaves, who affected to look down on them. In some instances they became mechanics and got along well, but even the opponents of slavery were greatly concerned as to how the subject could be properly handled, even supposing the financial end of it could be arranged.

Jefferson had for a long time a hope that Virginia would lead the way in emancipation, but he failed to see his anticipations justified. At that time little was heard of the brutality to slaves on the plantations, both because there was not a great deal of it and because there was brutality everywhere. In those days schoolmasters flogged their boys on the slightest provocation. Most young men were apprenticed at the age of fourteen, and their masters flogged them as they chose. There was flogging on all ships, there was flogging almost everywhere, and it was not thought much of because it had been an immemorial custom. As the white people began to grow more careful in this respect the treatment of the slaves became more apparent.

Why Slavery was Wanted

To go back to the Constitutional Convention, it is not likely that slavery would have been recognized at all in the Constitution, had it not been for the persistency of Georgia and South Carolina. These two States insisted on slavery being recognized and that the slave trade be kept up because rice was then the principal staple of those two States and it could only be cultivated in the swamps which were so unhealthy that even negroes could stand it for but a few years. This reason was boldly stated, and it did not make as much of a sensation as one would have supposed. The Convention was in a delicate position. It had been called to offer amendments to the Articles of Confederation but was making an entirely new Constitution instead. The members knew that there would be great opposition to the new plan, and they knew that the longer they sat the greater became the opposition, as the meetings were held behind closed doors and all sorts of absurd rumors were afloat as to what was being done.

It had been agreed that nine States must give their sanction to the Constitution before it went into effect, and there was great anxiety to get them all into the new arrangement. It is not likely that the Constitution would have been adopted by the necessary nine if there had been provisions against slavery, or even if it had not been mentioned, and yet there are some reasons for supposing that it might have been. The Articles of Confederation did not mention slavery, which was considered a purely local institution. At the demand of Georgia and South Carolina, slavery was recognized in the Constitution, the slave trade temporarily continued, and the arrangement made by which slaves should be considered full property and persons (in estimates for determining representation) to the extent of three-fifths of their number.

It is possible that nine States might have acceded to a Constitution that omitted all reference to slavery, and it is probable that if this had been accomplished the rest would eventually have acceded to it. The point to be made here is that the Constitution made three distinct compromises in favor of slavery, and on these were based all the subsequent demands of the ardent slavery men, but it is noticeable that it was not until after all the Constitutional Fathers were dead that the active propaganda in favor of slavery as a national institution, extending wherever the Constitution was in control, was begun. This we shall see later.

The Cotton Gin

The contest for emancipation was not given up until the beginning of this century. Indeed, there seemed a time when Virginia, Kentucky, Tennessee, and Alabama would take steps towards gradual emancipation. That this might have come is certain but for a Yankee invention. One Eli Whitney was visiting in Georgia the widow of that General Greene who had made such a brilliant campaign in the Carolinas and Georgia. This was late in the last century. Mrs. Greene complained that the culture of cotton was not profitable because the fibre, as picked from the boll, contained a number of seeds and it took so much time to pick these seeds out that it cost too much.

Mr. Whitney was a New Englander, and that section had already invented many

labor-saving machines, and "Yankee notions" were already celebrated. She believed that a Yankee could do almost anything, and insisted that he invent a machine that would take the seeds out of the fibre as picked from the plant. This was a novel and difficult task, but the Yankee went to work earnestly and in the course of a few months evolved a machine which did the work satisfactorily. The result was that soon cotton was made so cheap that there was an enormous demand for it from England, and this country was the principal source of supply. Up to this time cotton cloth was a much greater luxury than linen now is. In those days linen cost less than cotton, but when cotton became cheap it almost totally supplanted linen, except for the wealthier people, and it soon became impossible to raise the plant fast enough to supply the demand. Little did this Yankee think that he was constructing a machine that was to prove one of the most formidable factors in our social, economical and political history.

Cotton as a Staple

Rice and indigo soon went to the rear as staples and the demand for cotton lands increased rapidly. With this came the demand for slave labor. The demand was not based on economic principles. Those who sat down with pen in hand to figure out exactly what it cost to raise cotton by slave labor found out that there was little profit in the business. The season was short, and during the remainder of the year the negroes must be kept in comparative idleness. The negro who had no responsibilities ate much and saved nothing. Economically he was a failure as compared with free labor. If there had been no slavery at the South at this period it is not likely that the world would have known a section so prosperous. But the plantation question must be discussed hereafter.

In 1808 the slave trade was closed, but thereafter a considerable trade was carried on clandestinely and the ships from New England were largely engaged in it. It was not a difficult matter to ship slaves over from the West Indies so long as the local authorities in the South were conveniently asleep. Census figures used to show that the negro race increased much faster than it does now. It is probable that the smuggling of slaves had a great deal to do with the results as shown by the census figures, and imperfect reports account for the rest. The birth rate of negroes is greater, but the death rate is still greater, than among whites.

Growth of Anti-Slavery Sentiment

The growth of anti-slavery sentiment on purely moral grounds was slow, but the political feeling grew apace. By the Constitution three-fifths of the negroes were counted in the enumeration for Congress and Presidential electors. The result of this was that the slave-holder practically had a plural vote. If he owned fifteen adult male slaves he cast ten votes as compared with one by the Northern white man. In spite of this the North grew so much more rapidly than the South in population that the House of Representatives was almost always in control of the Northern men, but the Senate was for a long time equally divided, and it was the intention of the slavery leaders to keep it so. There were always enough Northern men who sided with the South to make it impossible to pass measures unfriendly to slavery through the Senate.

When Missouri applied for admission as a slave State, there was great objection from the North. The Northern people had no intention of interfering with slavery in the States. Until the Civil War was under way no such action was ever undertaken, nor was it ever seriously considered by the North. But they did believe that a State had just as good a right to come in free as it did with slavery, and there was strong objection to introducing slavery so far North as Missouri, although slavery had long existed there while it was a Territory. The result of the struggle was that Maine was admitted as a free State and Missouri with slavery, with the provision that slavery should never exist in any other part of the country north of the south line of the State of Missouri, which was 36° 30′ N. latitude.

The Missouri Compromise

This compromise was accepted in good faith on both sides, and was not disturbed for a generation. The Nullification troubles of 1832–33 were really over slavery, although the actual bone of contention was that of Protection. Here another compromise was made, and the Southern people turned their attention to getting new ter-

ritory to create additional slave territory. Texas was seized on and a conspiracy undertaken which resulted in the annexation of Texas, with the provision that five States might be carved out of it. Then came the Mexican War, which added California and New Mexico to our territory, these tracts including what are now several states and territories. The discovery of gold in California defeated the plot of the slavery people to get another slave State, and war was threatened, when the Golden State applied for admission with a constitution prohibiting slavery. Then came the so-called Compromises of 1850, and from this period dates the formation of new parties.

The "Wilmot Proviso" had already drawn the line in politics at the question of slavery. This was simply a rider to a bill appropriating money by which the President was to make a treaty of peace with Mexico. It provided that slavery should never exist in any of the territory acquired from Mexico. The House was favorable to this idea, and at one time the Senate was, but the bill failed then, and thereafter the Senate was opposed to it. This Wilmot Proviso issue split the Democratic and Whig parties. The Free Soil element to the Democracy rejected the nomination of Cass in 1848 and Taylor was elected. It was during his term of office that the Compromises of 1850 were proposed. He opposed them, saying that they were unnecessary, and to the threats of secession in the South announced that he would put down secession with volunteers from the South which he would lead. Death carried him off and there was no longer any strong opposition to the so-called compromises, which passed by large majorities, and were signed by the new President. It should never be forgotten that Jackson and Taylor, both Southern men, were the strongest foes of disunion, while Filmore, Pierce and Buchanan were Northern men who did more for slavery than all the Southern presidents.

These compromises were not worthy the name. As a whole they did not command a majority, and all the bills which had failed, such as the Clay Omnibus Bill, passed as separate measures, the majority in each case being differently constituted. California became a free State. Popular sovereignty was given New Mexico and Utah. Texas' claims to New Mexico were bought off at a big price, the slave trade in the District of Columbia was supposedly suppressed, and a new Fugitive Slave Law was enacted.

The Fugitive Slave Law

This last measure caused all the trouble. Had it not been passed, there might never have been a rebellion. This measure though in theory sanctioned by the Constitution was one of the most oppressive pieces of legislation ever enacted. The slave was denied a jury trial, and every possible means was employed to enable the slave-owner to get speedy possession of his escaped property. These provisions were totally opposed to all Anglo-Saxon ideas of justice. They practically amounted to a repeal of the principles of Magna Charta. When the slave-hunters went North to capture runaway slaves the excitement was intense. Men who had no moral objection to slavery, men who had defended the institution all their lives, were excited almost to madness at the spectacle of a black man taken from his refuge and returned to slavery by the most drastic measures. It was this that drove Charles Sumner to declare in Faneuil Hall that no man who had ever trod the streets of Boston a free man should be dragged back to slavery, and it was this speech that made him a United States Senator.

As the slave-catching process went on, men were aroused to the iniquity of slavery as they never had been before. The North had for years listened to Garrison and Phillips denounce slavery in the language of anarchists and were not moved. But when the object lesson was before them and they saw human beings driven back to slavery, not by "due process of law," in the usual meaning of that term, but by the arbitrary and cruel execution of an unjust statute, they were roused to a state of feeling that was soon to bear fruit. After this there was no mild defense of slavery and no rational discussion of the subject.

"Uncle Tom's Cabin"

Soon appeared Mrs. Stowe's "Uncle Tom's Cabin." It is difficult for us now to understand why this book became so popular either as a story or as an argument against slavery. It is true that the story is well told, but its literary character is not high as measured by present standards. Nevertheless, the story, as a

story, made a great sensation, and it was as popular in the South as in the North, so that finally many Southern legislatures had to make it a penal offense to have the book in one's possession. If the book had not been sought for, no such drastic measure would have been necessary. What made the book popular was not its literary merit nor its political arguments, but the fact that it was a true story about a subject that was at that time engrossing public attention. Let any person read the book now who is not familiar with the contest over slavery at the time it was written, and he will be surprised to find that it was considered a powerful moral argument against slavery.

Nine-tenths of all there is in the book on the subject of slavery is rather favorable to the system than otherwise. Slavery in Kentucky is pictured as a very mild institution which did not distress the slaves. They seemed to enjoy their existence free from care, and that they did not overwork themselves and had plenty of leisure is made apparent. The sale of Uncle Tom and Eliza's child is distinctly shown to be an unusual event which the master was forced into because financial disaster had overtaken him and he could not avoid it. It is shown to have been unusual and reprehensible, even from a slaveholder's point of view. The career of Uncle Tom in New Orleans was a happy one. His owner was one of a very large class of citizens in the South who deplored slavery but did not see how it was to be gotten rid of. They treated their slaves well and hoped for a better state of things to come. The treatment of Uncle Tom by Legree, ending in his murder, is not set out as typical. It is distinctly shown to be unusual, and his murder was not stated to be upheld by Southern sentiment. On the whole, the book was as good an argument for slavery as it was against it. It was not written as an argument at all, and no one was more surprised than the author at the fame it attained. In fairness, it must be said, that this popularity was largely due to the existing state of excitement in the country over the Fugitive Slave Law. If the book had been written ten years earlier, it would not have reached anything like the popularity that came to it through opportunity.

Politics and Slavery

The state of excitement was the greater by reason of the repeal of the Missouri Compromise: which made it possible that Kansas should become a slave State. That this was involved in the Compromises of 1850 was believed by politicians North and South, or it would never have passed by such large majorities. But the people did not look at it from the view of the compromising politician. It seemed to them that this was simply a trick by which territory forever dedicated to freedom was turned over to slavery. Then came the struggle to make Kansas a slave State, and one can but marvel at the fatuity of the politicians who believed, in view of what they could see and hear, that this was possible. The more it was attempted the more it was resisted, and freedom won, not by peaceable means alone, but by the sword as well, for the men who went to Kansas in those days to instal freedom had resolved to use the same tactics as their opponents, and they finally won, though they were assisted more by the pro-slavery administrations at Washington than by all the Sharpe's rifles or Emigrant Aid Societies in existence.

The Dred Scott Decision

Then came the Dred Scott Decision, which said in effect that a man once a slave was always a slave. This was bad enough, but one expression of Chief Justice Taney, in his opinion, made the matter worse. He recited as a fact that, at the time of the adoption of the Constitution, the negro was held in low esteem and "without any rights that the white man was bound to respect." Now, unfortunately, this was pretty nearly true at that time, but the people immediately thought that Taney himself stated this as a decision in law. To assert that the negro had no rights that a white man was bound to respect was to make him less than a brute, and this converted men almost by millions who had been unmoved by all other considerations. The attack on Sumner was considered as another of the brutal attempts of slavery to destroy freedom although, as we have formerly seen, this was purely an individual matter and one in which Sumner had given the greatest provocation. By the time the elections of 1860 came round, the people of the North were almost in a

frenzy over slavery. They conceded nothing as to the possible benefits of the institution. They were not yet ready for abolition, but they were determined that not one inch more of territory should be given to slavery. This was right, but the South took the view that the people of the North were intent on manumitting the slaves.

After Lincoln was elected there was for a long time a determined effort made to have another compromise passed, but this became impossible and war was the result. In 1863 the slaves in the seceded States not occupied by the national forces and under some national civil administration were declared free by President Lincoln after giving three months' notice that this would be done. This idea seems to have originated with John Quincy Adams, who declared long before that such a policy might be carried out as a war measure. Of course this was of no effect where the Confederate forces held the field, but it did remove one vexing problem as to the disposition of the former slaves, who had formerly been treated as contraband of war. When the Confederacy fell all the slaves in the lately seceded States became free except in a few places, and in States where the Federal Government had been sustained, and the Thirteenth Amendment soon made them all free.

Such was the condition when the war was fairly over. The shackles were stricken from the negro, but a still greater problem remained. How that problem was undertaken will be discussed next month. Let us look for a few moments at the actual condition of the negro in slavery. When the war broke out there were nearly four million slaves.

The number of Slave-holders

It was estimated that there were only 350,000 slave-holders altogether, yet in the South there was cast in that year over 1,200,000 votes, so that only one-fourth of the voting strength was directly interested in slave property. But very many slaves were held by women, and it is stated on good Southern authority that only about one-seventh of the men were slave-holders. There were only two men who held more than 1,000 slaves and one of these, at least, was a man of the highest personal character who had served in Congress and was esteemed even by those who hated slavery. By far the great majority owned five slaves or less — that is, not more than one family — and any one familiar with slavery knows that under such circumstances slavery was not profitable. It was convenient, however, and so customary as to seem essential. In these cases the slave was either a man-servant or a cook or, in any event, a house servant. In spite of all the stories we hear about the people ruined by the war, there were but a small portion of the people who owned more than twenty slaves or five families at the most.

As to brutality, it must be confessed that there was a great deal of it in the aggregate, but not so much as one would suppose. Slaves were wanted to work, and a slave-owner must at least treat his slaves as well as his horses. If the slave was sick, he was cared for. If he got in trouble, he was looked after. He was well fed and sufficiently clothed, and he never had to worry about the future, so far as the necessaries of life were concerned, and yet this very consideration is what troubles many thousands, perhaps more millions nowadays than there were ever in slavery. There are men today who will maltreat their children or their beasts. But that the great majority of the slaves were well-treated is the testimony of observers from the North, and of the Southern people who now see that slavery was wrong, and have no wish to see it restored. There were many cases of brutality, but they were the exception. The writer makes this statement as one who lived among slaves, who has visited nearly every Southern State, and has talked with the negroes as well as the whites, and who has read about all the existing literature on the subject. Slavery was a bad institution, but its worst feature was not that the slave suffered physically. There were far worse problems to be considered than this, and when the slave became a freeman he found out that liberty was not all that he needed to make him prosperous.

Characters in "Uncle Tom's Cabin"

The writer lived in the county from whence came most of the types which formed the characters in "Uncle Tom's Cabin." He knew them all. The man who was described to Mrs. Stowe as the worst of masters she put into her book as Legree, but

located him in Louisiana for the reason that her story had shifted to that State. This man was as much hated by the surrounding slaveholders as by the slaves themselves, and he finally was killed by his own son while attempting to kill another son. He was no more a type of slaveholder than John Brown was of the average Northern citizen, as the South came in time to believe. In Kentucky, slavery was an exceedingly mild institution and was not particularly prosperous. It was seldom that any but a "bad nigger" was sold, and to threaten to send one "down the river" was enough to keep all but the worst in submission. It was only in the cotton-growing and rice-planting districts that slavery was seen at its worst. There in the summer season the work was hard and the hours long, but it was by no means the rule that slaves were maltreated physically.

This is no defense of the institution. The slaves generally did not like their lot. Freedom is dear to every human being, but is it not singular that so many of the plantations were turned over almost entirely to the slaves during the war, and that they were carried on faithfully while their masters fought? More than this, when the blockade became absolute most of the cotton raising was stopped and new crops were substituted. This was done almost entirely by the slaves and the instances are very, very, many where the slaves looked after their masters' interests with as much honesty, intelligence and fidelity as if they had been carrying on their own business. The negro is faithful. He needs some stimulus to make him work — more than the average white man — but he can work and does work. His condition, however, was often far better than that of the poor whites in the neighborhood. Anyone who has lived in the South knows the contempt which even negroes had for the "poor white trash."

Forty Acres and a Mule

The negro is also emotional. When General Sherman made his march to the sea thousands on thousands of the negroes deserted the plantation and followed him. The idea was spread abroad that the government was going to give every negro forty acres and a mule. This led a large proportion of them to desert their former masters and seek the promised land, which was never found. This was most unfortunate.

The negro question was and is largely a land question. If the slaves could have been freed gradually, or all at once under proper provisions, there would have been no loss to the landowner. The slaves on a plantation were worth more to the owner as hired servants than as slaves. The present condition of the Southern States shows this. The colored people have made a wonderful advance in the last thirty years, but they could have made a great deal more if the arrangements for freedom had been conducted on a better basis. Desirable as it was that all the slaves should become free, no one familiar with the subject now thinks that it came about in the most desirable way. Lincoln did not. During the war he was willing that the government should pay $400 for every slave and that the war should cease. It was necessary that emancipation be declared as a war measure, and it served its purpose; but it was only a last resort.

The slave was now a freeman. What his condition was then, what he had to encounter, and what he has to meet in the future will be discussed in another paper.

JOSEPH M. ROGERS.

* * *

The disastrous effect on Spanish industry of the rebellions in Cuba and the Philippine Islands is reported by the foreign consuls in Spain to be great. To a large extent, writes one of them, these disturbances have paralyzed the commerce of Catalonia, which is a manufacturing rather than an agricultural district, and the greater part of its products find markets in the Spanish colonies. Everywhere in Catalonia mills have been closed, or are working short time with a diminished number of hands. As an instance, the same authority cites the case of Mataro, one of the chief manufacturing places in the district. Of eight cotton factories there, five only are working, and these have only a third of their usual complement of workmen; they work an average of four days a week, and forty other factories which ordinarily employ 8,000 men now have only half that number. This naturally causes much misery, which would be more apparent than it is had there not been such a drain on the population to supply recruits for the armies in the field. In some of the country villages this drain of the youth is particularly noticeable, and none but old men, women, and children are to be seen, the farms being looked after by the women and children. The Vice-Consul in Minorca gives a somewhat similar description of the effects of these wars on that island, where the chief industries are decaying on account of them as well as of a succession of bad harvests. Cotton spinning and weaving, and the making of boots and shoes are the main industries, the latter going mainly to Cuba and the cottons to the Philippines. From Valencia, again, the Vice-Consul reports, that owing to the colonial wars commercial depression continues unabated in his district. "The burden of these wars falls heavily upon all classes, and has greatly hampered commerce by the imposition of a special tax for the building and maintenance of the Spanish navy."

LAST INDIAN HISTORY TO THE CLOSE OF THE LAST CENTURY. *

THE kinship of the British people with a large section of the inhabitants of India is now known to be very close. Ethnologically, the Briton, the Brahman, and the Rajput are descendants from the same parent stock, the Aryan or Indo-Germanic race. All three had an origin in common in Central Asia. Though it is customary to speak of India as being peopled by the two chief prehistoric races, the Aryans and the non-Aryans, there is in reality a four-fold division of the people. It is well to bear this in mind, as the question of race or "caste" in India is a very important one. The four elements that make up the population of British India are as follows: (1) The descendants of the Aryan or Sanskrit-speaking race (the Brahmans and Rajputs), who number about 16 millions; (2) the non-Aryans, or Aborigines, who, in the British Provinces, number about 18 millions; (3) the great mixed population, known as the Hindus, which has grown out of the Aryan and non-Aryan elements (but chiefly out of the latter), and numbers about 124 millions, or, including the Feudatory States, 207 millions; and (4) the Mohammedans, who some 900 years ago began to migrate to India, and now number about 41 millions, or, including the Feudatory States, 57 millions.

There are two marked distinctions between the modern types of the Aryan and non-Aryan people in India, viz.: color and features. The Aryans pride themselves on their fair complexion and finely-formed features. Of this class the most influential are the Brahmans, who monopolize priestly and literary pursuits, and are the learned men and teachers of India. The non-Aryans, partaking of the Asiatic type, have the squat Mongolian face and irregular features. From this class Britain has drawn some of her bravest and most loyal Indian soldiery — the Ghurkas and hill-men of the northern mountain ranges among the number.

Bound up as they are with the history and literature of the country, a word here may not be out of place on the religions of India. The prevailing creed is Hinduism, which is at once "a social league resting upon caste, and a religious alliance based upon worship." Buddhism was the first great bond of union among the Indian races; but long ago it was in great measure displaced in India by Brahmanism, the religion of the Hindu, though it has not failed to flourish in exile in other large districts of the East. Hinduism, though it had its origin in many sources, is more or less a fusion of the early faiths of the people, including the mild doctrines of Buddha, the ancient, simple beliefs of the Veda, with a combination of Vishnu worship, and, among the low castes, the propitiation by human sacrifice of "Siva, the Destroyer." Its caste basis rests upon distinctions of race, occupation, and geographical position, and these for the most part erect rigid social barriers which clearly and sharply define the lines of society. Occupation generally, however, marks the dividing line. The four classes which caste recognizes are the Brahmans or priests, the soldiery, the traders, and the agriculturists. As a rule, the Hindu remains for life in the caste in which he is born.

But while the religion of Buddha was being supplanted by Hinduism, a new faith had sprung up in Arabia, and its professors, the Mohammedans, carrying aloft the crescent banner of Islam, poured their conquering hordes into India. The Mohammedan dynasty dates from about the year 1,000 A.D., and comes down to the nominal rule at Delhi of the last of the Mogul emperors, who, for his complicity in the mutiny of 1857, was banished to Rangoon, where he died in 1862,

* The India of to-day, including British Burma and Assam, comprises twelve Provinces under British rule, and twelve groups of Native States. Each British Province has its own Governor or Commissioner, who is subordinate to the Governor-General or Viceroy, the head of the Supreme Government of India. The Native States, which are known as Feudatory India, are governed by native princes under the suzerainty of Britain. The total area of British India is nearly 965,000 square miles, with a population of close upon 222 millions. The total area of the Feudatory or Native States exceeds 600,000 square miles, with a population of over 66 millions. Besides the British Provinces and Native States there are a few Portuguese and French settlements, but they are of minor extent and importance.

and the dynasty ended with him. This long period of Mohammedan rule is marked by internal dissension and external conflict, by anarchy within and invasion from without. Persian and Afghan hordes successively attacked the northern boundaries of the kingdom, while its southern confines were, at a later period, repeatedly overrun by the Mahrattas and the Sikhs. The flourishing period of Moslem rule is embraced between the year 1526, when the Empire of the Moguls was founded, and the year 1707, when Aurungzebe, the most famed of the Mohammedan conquerors, died. After this Emperor's death the Mogul kingdom declined, for the Hindu Provinces of Deccan and Oude won their independence, and the Sikhs and the Mahrattas were driven into revolt. It was from the two latter confederacies that Britain won India, aided by Mohammedan princes in Bengal, in the Carnatic, and in Mysore. The Mahratta power was finally broken in 1818; the Sikh confederation was not overthrown until 1848.

British settlement in India practically dates from the year 1600, when the East India Company was founded.* A hundred years earlier the Spaniards, the Portuguese, and the Dutch, actuated by the spirit of enterprise of the time, were all eager to reach the Indies, and to bring home some of its fabled wealth. Columbus, as we know, discovered the American Continent in his search for a passage to the gilded Orient, and Vasco de Gama reached it by way of the Cape of Good Hope. During the whole of the 16th century the Portuguese had the monopoly of trade in the East. When the crowns of Portugal and Spain were for a time united, the national interests of Portugal were merged in Spanish conquest in the West, and her Asiatic trade passed into the hands of the English and the Dutch. Competition between the two latter powers for the commerce of India was in the 17th century keen, and on both sides aggressive. But in 1758 the tide turned in favor of Britain, when Clive, at Chinsura, forced the Dutch to capitulate. Sixty years later, Dutch trade on the mainland of India received its deathblow, when England, during the great French wars from 1793 to 1811, won all the colonies of Holland.

*See Encyclopædia Britannica, vol. XII., p. 798

But England had other rivals besides the Portuguese and the Dutch in the trade of the Orient. France had early laid covetous eyes on the wealth of the Indies, and possessed a Trading Company in the East under charter of the French Crown. There were also various English companies formed for trading purposes in India and the Indian Archipelago. In 1709 the two chief companies were amalgamated under the style of "The United Company of Merchants of England Trading to the East Indies;" and forming one organization, it was to be henceforth known as the "East India Company." At successive periods this great corporation obtained a renewal of its charter, though its powers were more or less modified as time went on, until the year 1858, when the Company and its affairs were transferred to the British Crown.

The first trading ventures of the East India Company were for cargoes of pepper and rich spices in the Indian Archipelago. On some of the islands of that sea the Company established factories, or houses of trade, which ere long brought its servants into collision with the Portuguese and the Dutch. In 1623 occurred the massacre by the Dutch at Amboyna, which drove the English from the Spice Islands to the mainland of India. The Company soon obtained a footing on the Coromandel coast, where it erected Fort St. George, its first territorial possession, and the nucleus of the later city of Madras. Settlements were ere long effected at Bombay, at Fort William (Calcutta), at Murshidabad, once the capital of Bengal, and at various points on the Hugli, a navigable branch of the Ganges. The French also made good their foothold in the country, establishing themselves at Chandernagor, just above Calcutta, and at Pondicherry, a hundred miles south of Madras.

At first the English East India Company pursued its trade by permission of the native princes, whose rights it for a time respected, though the cupidity of the Company and its employees were ere long utterly to disregard both political and commercial morality. The rivalry of the trading companies of other nations, particularly the French, soon introduced discord into the country, and with it a factor of no inconsiderable account in the spoliation of India. Its fruit was soon

seen in setting the native rulers by the ears, in deposing some, and extorting from others immense sums of money, and ere long their territorial possessions. The trading companies were greedy and their servants unscrupulous. Such was the position of affairs in India when, in 1744, war broke out in Europe between England and France. At this time, M. Dupleix, the French Governor of Pondicherry, was ambitious that the rule of his countrymen should be the dominant one in India. The English, as may readily be imagined, were the special objects of the Governor's designs; and in 1746 Madras surrendered to a French squadron which was then cruising on the coast. Two years afterwards, an English fleet failed in the attempt to take Pondicherry, but Madras, by the treaty of Aix-la-Chapelle, was restored to Britain.

Meanwhile the local situation was not improved by these Anglo-French outbreaks. The whole of Southern India, on the fall of the Mogul power at Delhi, had become practically independent; and in the Deccan the Nizam-ul-Mulk was founding at Hyderabad a hereditary dynasty. The Carnatic, the lowland district lying between the central plateau and the Eastern Sea, was governed by a deputy of the Nizam, known as the Nawab of Arcot. To the south lay Mysore, Tanjore, and and Trichinopoli, which were all seats of independent Hindoo power. On the death, in 1748, of Nizam-ul-Mulk, the "War of Succession" to the throne of the Deccan, referred to in Macaulay's Essay on Warren Hastings, began to rage. The English supported the claim of Nasir Jung, a son of the late ruler; while it suited the purpose of the French Governor, Dupleix, to maintain the cause first of one grandson and then of another.

To the subordinate sovereignty of Arcot, the French and English advanced the interests of rival claimants. The former upheld the pretensions of Chunder Sahib, while the latter countenanced those of Mahommed Ali. To end the trouble, which was a source of danger to Madras, and to cripple the influence of France in the Carnatic, the English directed Clive, who had come to India in 1743, to proceed with a small but, as it turned out, brave force to seize Arcot. Clive's capture and subsequent defense of the place was the first of his great military achievements, and made the year 1751 famous in the annals of British India. From that date French power in the East began to decline; and its overthrow occurred nine years later, when Sir Eyre Coote won the victory of Wandewash, and in the following year starved Pondicherry into a surrender.

The scene now shifts to Bengal, and to the advent of Warren Hastings. In 1740 the hereditary succession to the throne of the Province had been broken by a usurper, who died in 1756. His grandson, Surajah Dowlah, a hot-headed youth of eighteen, became Nawab of Bengal. The Court was at Murshidabad, contiguous to Cossimbazar and the European factories on the Hugli. Down the river, at Calcutta, there was by this time a large settlement of English. Suddenly the city was seized by a panic on the appearance at its gates of an army of the Nawab. On the pretext of capturing a relative, who had escaped from his vengeance, Surajah Dowlah had marched upon and invested Calcutta with his forces. Most of the English fled down the river in their ships, though 150 of them were captured and flung for the night into the military jail at Fort William. Only twenty-three emerged on the morrow from the horrors of the "Black Hole!"

While this tragic occurrence took place, Clive was at Madras with the British fleet under Admiral Watson. On hearing of the calamity he instantly set out for the mouth of the Ganges, and Calcutta was promptly recovered. The Nawab fortunately consented to a peace, and made ample compensation for British losses. But Clive soon found the opportunity to settle accounts more satisfactorily with Surajah Dowlah. War having again broken out between France and England, the hero of Arcot made it the pretext to seize the French settlement on the Hugli of Chandernagor. This enraged the Nawab, and in hot haste he took up the cause of the French. Clive, acting upon the policy of the Governor of Pondicherry, put forward a rival claimant for the throne. Resort was had to arms. At Plassy, about 70 miles north of Calcutta, the die was cast, and Clive, with less than a tenth of Dowlah's army, met and scattered it to the winds. Placing Meer Jaffier on the throne of Bengal, Clive dictated his own terms on

elevating him to the position, and the East India Company became practically masters of the Province.

Plassy was fought on the 23d of June, 1757, and in the following year Lord Clive was appointed by the Court of Directors Governor of the Company's settlements in Bengal. The incidents connected with the dethronement of Meer Jaffier, the revolt of Meer Casim, and the re-conquest of Bengal, brings the story of British occupation well on in the career of Hastings. These and subsequent stirring events brought out the resources of that famed administrator, and, with Clive's military genius, make the history of the period a notable one in the annals of India. Clive's rule in the East terminated in 1767; Warren Hastings' extends from 1772 to 1785. After that came the administration of Lord Cornwallis and the second Mysore war, and the century closes with the third Mysore and the second Mahratta war and the military rule of the Marquis of Wellesley. These stormy scenes served to consolidate British power in India, and to prepare the way for other signal triumphs and a more peaceful and beneficent administration. G. M. A.

CONTEMPORARY OPINION:

THE LOGIC OF PAIN

WE are apt to regard pain as too exclusively an evil, and an unmitigated evil. We regard it as the essential part of the primal curse; its endurance is part of servitude, or the fate of the vanquished amidst savage races. Pain in disease has always been regarded as the great part of the cross we have to bear. Yet the question may be asked, is pain an unmitigated evil; has not pain other aspects, other sides to it? Is the pain of disease, or of an injury not often highly, indeed eminently, useful?

There are certain forms of pain, observes Dr. J. Milner Fothergill, a notable authority in Medical Science, to which animated beings are subject, which seem devoid of any good purpose, such as the pain inflicted by a cancerous growth. Cancer does not necessarily produce pain, and in nerveless regions its growth is not productive of suffering. But when a nerve-fibril gets caught by the progressing cell-growth of cancer, and is pressed upon by its remorseless grasp, then pain, persistent and agonizing, is the result. Probably no torture that ever was inflicted by man on man is more exquisite than that caused by the grip of a cancerous growth; where, as a literary man once wrote, "there is no temporary relief but in opium, no permanent rest but in the grave."

It would, however, be very erroneous and one-sided to regard pain solely, or even chiefly, from the point of view here put forth. Pain is the protector of the voiceless tissues. It tells us to desist from efforts when they are becoming injurious, it teaches us to avoid what is destructive to the tissues; it compels us to rest injured parts, and so to permit of their repair. Pain, then, is very far from an unmitigated evil. To what injuries, blows, burns, contusions, etc., would not the framework of man and of animals be subjected if the slow lessons of consequential injury were left without the sharp reproof of pain. The suffering immediately attracts the attention, and consequently that which would do much damage is avoided, not from any rational consideration of the consequences, but from the pain directly produced. Without the advantages which thus spring from pain, animals and savage men would incessantly be inflicting much injury upon themselves, and indeed often be imperilling their existence. Pain from this point of view is distinctly preservative throughout the whole of animated creation.

The utility of pain is seen in the membrane which sweeps the surface of the eye, for instance, in several animals, whenever any irritant particle is brought into contact with these delicate structures. The pain caused by the foreign body sets up reflexly a muscular contraction in this membrane, and thus it is brought across the eye, sweeping the surface, and so the offending matter is removed. When the foreign body is too fixed to be so removed, disorganization of the eye follows, and amidst a general

destruction of the organ the irritant matter is got rid of. Destruction of the eye in these animals would be a common occurrence if it were not for this muscular arrangement, and pain is the excitant. Not only does pain so defend the eye from the injurious effects of foreign bodies, it often serves to protect the delicate organ from overwork; and where pain is so produced, rest is given to the part, and recovery is instituted. The grave diseases of the eye are those which are painless, where incipient disease is aggravated by persisting action.

The advantages which ensue from pain are most markedly seen, and are most obvious, in the case of injuries. When a joint is sprained the pain caused by movement in it compels the rest which is essential to repair. If there were no pain produced by motion the parts would almost certainly be exercised to the detriment and to the delay of the reparative processes. So too, in broken bones, the agony caused by motion is such that a fixed position is maintained for weeks; with the result that the part, being kept at absolute rest, is thus permitted to recover as speedily as may be.

In like manner pain is most protective in certain internal diseases. Thus in inflammation of the large serous covering which invests the abdominal viscera and lines the walls of this space, pain, the result of movement, secures rest. Doubtless this pain is often such as to constitute a great danger to life; nevertheless, without it and its consequences more serious mischief would usually be produced. When there is an abscess in the liver, pain is induced by movement of this viscus; when a rib is broken, the fractured end rubs upon the pleura, and excites inflammation of it; and the pain thus set up causes the patient to call in a surgeon. Then in certain conditions of the stomach, pain is produced by improper food; and so dyspepsia guides the sufferer to the choice of suitable food, which does not set up pain. Such are some of the best known instances of the utility of pain in local ailments or injuries.

There are, however, more general conditions which evoke pain, and where that pain is the means of the condition being relieved, or remedied by medical art. Take neuralgia, for instance. It may be the outcome of several conditions which have to be discriminated for its relief. Neuralgia is the common outcome of blood either poverty-stricken or poisoned by some deleterious ingredients, as in material poisoning for instance. Without the pain so produced the condition would go on unrelieved, and ulterior organic changes would probably be brought about. The pale, bloodless creature who is the prey of facial neuralgia, or that pain in the intercostal nerves which is felt below the heart (and commonly referred to that organ), is compelled thereby to desist from exhausting efforts, and to seek in rest and good food that relief which is so imperatively demanded by the pain.

With several persons known intimately to the writer, neuralgic pain is the first evidence of the system being overtaxed. In one gentleman this is very marked. Long and sustained over-exertion, mental and bodily, some years ago, brought on a most severe and continued attack of sciatica, which necessitated a lengthened rest before recovery was completed. He now knows distinctly how far he can go with impunity. In this case the pain is directly conservative and conducive to health, and to length of days; it is indeed protective against physiological bankruptcy, or exhaustion. It is rather singular that in this gentleman's wife a similar phenomenon is found. She is dyspeptic, and as a consequence often reduces the food she takes to an amount below what is compatible with proper nutrition. In her case, a gusty current of facial neuralgia, like a long wail, is at once the indication for, and the direct cause of, more attention to her diet, and, hence, her health generally is improved. So, too, in lead poisoning; here colic or neuralgia attracts attention, and points alike to the cause and its treatment.

Headache often alone can secure that rest which the brain requires; and the headache of exhaustion is as marked as is that pain at the top of the head which tells us that the brain is insufficiently supplied with blood. The headache after a day of exertion, excitement or enjoyment, so commonly met with in ladies, secures a day of complete quiet, during which the system regains its tone. In dyspepsia, too, the pain caused by food, and still more by unsuitable food, either improper in quantity or in quality, is the direct incentive to the necessary attention to the matter, whereupon improvement

follows. Absolute rest for the stomach is a serious and very troublesome affair for the patient; and though so grave a condition is not often reached, such cases are sufficiently frequent to point out the protective character of dyspeptic pain. To many persons their hateful dyspepsia is a species of guardian-angel; though it is very probable that they are not in the habit of regarding it in that light.

When a muscle is exhausted its contractions are accompanied by pain. Consequently this pain secures the rest requisite for repair in muscles that are utterly exhausted, as is seen in the present common "tennis-elbow." The characteristic of muscular pain is that it is absent as long as perfect quietude is maintained, but as soon as the muscle is thrown into action pain is produced. So, too, with a gouty toe, the agony produced by movement secures the requisite rest for the inflamed joint. From which considerations it is clear that pain is not always an unmitigated evil, but has at times a distinct value of its own.

WORRIES

BY worries we mean evils in anticipation; those fears, vexations, irritations, and dangers which haunt the mind, unsettled and disturbed, out of its ordinary routine though it is so far at ease in present circumstances, and has so little ground in positive fact for its forebodings, that it has to call in fancy to swell vague apprehension into shape and consistency. "Misfortune," says an old journalist-reviewer, "is not a worry, nor yet is a well-grounded anxiety. Worries are possibly impending troubles and annoyances, magnified into such large dimensions as not seldom to cause more uneasiness as mere creatures of the imagination than they would do if converted into fact. We know, while we brood over them and dilate upon them, that we ought to combat them, that we are exaggerating trifles into things of importance; we are conscious of a fevered fretful fancy, and that our fears are of the nature of phantoms. The real troubles of life, experience tells us, are facts equally patent in all times of the day, in all weathers, in every state of health. We may feel them more at one time than at another, but they never lose their character to the understanding. We are aware, on the contrary, that worry expands and dwindles. Awake at midnight, it is a terror, at noonday a bugbear to be smiled at, set aside, overcome; but not the less is its sway powerful at its own time and hour.

There is a mixture of conscience and cowardice in the character subject to worry. It terrifies us through our weaknesses by revealing a vista of uncongenial effort, of muddle that we cannot see our way through, of energies severely taxed. Always we are the actors unprepared for our part, unequal to it; but, however many are concerned, *ourself* is the person on whom the pressure lies, on whom it devolves to disentangle intricacies, to reduce chaos into order, to reconcile contradictions. The mind subject to worries is not indolent; but it runs in a groove, expatiates in leisure, cannot rouse itself to prompt action, is very far from rejoicing at a sudden call upon its powers. And yet from these very causes—from its dread of *contretemps*, failure, incongruity from its horror of confusion, from its recoil from risk, from its morbid pursuit of remote consequences, from an unnecessary and little appreciated sympathy with others in possible predicaments—it feels that itself is the one to step into the breach, to plan the rescue, to face and to avert the mischief; an innocent vanity, after all, which generally dies with the daylight. It is Hamlet's state of mind applied to social difficulties and the lesser miseries of life:—

"The time is out of joint:—O cursed spite,
That ever I was born to set it right!"

The victim of worries is necessarily very unfit for the work which he thus officiously imposes on himself. How, asks the moralist, can we regulate events of which we know not whether they will ever happen, and why should we think with painful anxiety about that on which our thoughts can have no influence? Common sense will be no party in such consultations. The man who tackles and gets the better of difficulties when they do arise is of another temper altogether; he is one who waits for the occasion, wasting no ingenuity on imaginary

situations, but quick to apprehend and arrange the facts of a case as they declare themselves. He does not fret and fume in perplexed anticipation through the hours of inaction, but, clear-headed, in calm self-reliance, addresses himself, not without complacency, to the task of reducing confusion to order, and setting the crooked straight. Whatever reflection he bestows will stand daylight and discussion. The other, the dreamer, listens, admires, acquiesces, and, if he is wise, keeps his unprofitable lucubrations to himself, thankful to have the question that has so painfully exercised him settled for him.

The step from being haunted by worries to worrying in turn is, however, almost inevitable. Whenever some occasion brings many persons together for a common object there is generally one of the company importunate in pressing his apprehensions on the general mind. The anxious, worried member of a travelling party cannot help being troublesome to his associates by warnings out of season. He gives vent to his fears when fears are futile; he foresees that the baggage will be lost, the train missed, the hotel full, when nothing can be done to avert these calamities. His enemy comes between him and the fairest prospects, and he cannot help making others sharers in his own distraction, probably showing the least resource of any of the party when the thing he fears really happens. But, wherever worries are given way to, the worried person, whether it be in the cause of punctuality or foreseeing danger and possible inconvenience or accident, breaks up snugness, reminds his friends of cares and duties which all would willingly forget for a time, and spoils the pleasure which he is so solicitous to preserve from disturbance and mischance. This may be merely the instinct of teasing, but it is also the temptation of the nervous temper alive to possibilities, and feeling that nobody else is sufficiently awake to remote dangers.

The greater troubles of life are certainly independent of times and seasons. But surely the pleasure-taking season is the season of worries. They characterize the turn of the year along with rooks, and partridges and shooting stars, which may be seen all the year round, but collect in flights, and run in coveys, and fall in showers in the autumn. The holiday months are the very hotbed of worries; nor need a person be peculiarly susceptible to worries to be tried by them at this season. It is their opportunity. Somebody must lie awake through the small hours in every family that is engaged in a scheme of change and enjoyment. Somebody must puzzle himself or herself to the verge of despondency in every house which expects a succession of guests; how to reconcile contending plans and claims, how to make the right people meet each other, and how to keep the wrong people from falling in each other's way. However smoothly things may run, someone, we may be sure, has had an uneasy time. Serene and smiling as is the brow of the hostess, it has wrinkled but lately under a touch of mimic anguish, very like the real thing while it lasted, as she passed difficulties under review and saw shadows loom and grow portentous to a startled fancy.

Worries flourish in holiday time because in fact they are the trials of prosperity. They drop into insignificance at the first touch, or even threat, of calamity and adversity. The heads of a sea-side party, worried to death with the various uneasiness and inconveniences incident to this form of enjoyment, find them disappear into space at the mere alarm of sickness or the panic of a bathing accident. How coolly will a man take the disarranging of elaborately planned schemes of pleasure, or even some slight where his feelings are most sensitive, at the first suspicion of something wrong in his affairs; while he would have fumed, fretted, believed himself the victim of cruel fate, made everybody unhappy about him, if he had seen his fortune on the rise instead of going down.

Unbroken felicity is incompatible with humanity; worries are the natural alloy of a prosperous career. They are the recognition of the law of mutability. The difference is that happiness has small torments appropriate and peculiar to itself, which so often overcloud it to its owner that it is not recognized for what it is till that phase of it at least has passed away forever. And certainly this is one of the compensations for downright calamity. Misfortune on a large scale sends worries packing, and people will sleep under a heavy loss who pass weary vigils under

the pricks of small apprehensions; the mind under the shock feels suddenly loose and disengaged from a hundred petty annoyances. A strange sense of liberty floods the mind. So many things now don't signify which before were of such worrying importance.

It may, however, be argued that since there is no such thing as human perfection, the world would get on but ill if there were no tempers a little on the side of morbid, and apt to fuss themselves to others. We see people indeed to whom nothing comes amiss, who take for granted that all will go right without their meddling, who live as though they had perfected themselves in the wise maxims we have referred to, who never anticipate trouble or are alarmed a moment too soon; but, however comfortable this may be to themselves, the lesson comes too naturally to them to engage our confidence or sympathy. Men are so much oftener immovably serene from apathy than from reflection that, if we cannot have the exact medium, we resign ourselves rather to the perturbations of a temper prematurely and unprofitably anxious, with a will to help and rectify beyond its resources, than to the passive endurance and calm helplessness which contentedly leaves the frets, entanglements, and uneasiness of social life to whoever is willing or forced to encounter them.

EARLY EUROPEAN CONTACT WITH THE AMERICAN ABORIGINES:

THE JESUIT "RELATIONS"

SAVAGERY, it has been said, is civilization's childhood. We should like to think so. Despite past experience of the Indian in his savage state, we should like to think, that in his brutalized condition there were the makings of something better. We should like to think, that as it has been the fate of some portions of the race to lapse into barbarism, that out of barbarism they will yet emerge. We should like to think, that, in the philanthropies of a coming day, forces will yet be moved to upraise the Indian to civilization, and to eradicate from his nature those dispositions and tendencies that drag him backward in the path of progress, or, while imitating bad examples set before him, that civilize him out of existence. We are told that a race that cannot itself contribute its redeemers will never be redeemed. But this, as the present writer has elsewhere said,* is too pessimistic a view to be willingly entertained. We admit it would be encouraging to find, that, when some advance has been made by the savage towards civilization, reversionary tendencies did not persistently crop out, and undo the work that had been done. But have the conditions been favorable to the experiments? Has the reclamation of the Indian been tried under conditions so auspicious that one might look for anything but failure; and has it been tried with earnestness and persistence? People who speak hopelessly of the civilization of the aborigines have spoken with like hopelessness of the "lapsed masses" of their own kind. There is one feature, at least, of encouragement in the Indian's case, namely, that we have never enslaved him, though, unfortunately, he has enslaved himself. But for the latter we are more responsible, perhaps, than he. Too often we have made of the noble savage an ignoble brute.

The problem of Indian civilization is a profoundly interesting one. To the people of this continent, it is more, however, than this. On three specific grounds it is of momentous import: first, as a duty incumbent upon governments, in the management of those wards of a nation whose hunting-grounds the country has appropriated; secondly, as a Christian people, responsible for the care and well-being of their less favored brethren; and, thirdly, in the relation of all towards subject tribes whose good-will it is desirable to propitiate, for the sake of the poor settler who makes his habitation among them. The Indian Question, long ago, became one peculiarly appropriate for the white race to discuss. As has been said

*See chapter on the Indian tribes, in "The Canadian North-West: its History and its Troubles," by G. Mercer Adam, Toronto, 1885.

of it, it is a question entirely of the white man's making. We came to the Indian, not the Indian to us. We were the aggressors. We invaded his territory, and we made of it an aceldama of blood. With one hand we held before him the Cross; with the other we cut him down with the sword. While we taught him that Christ's kingdom was peace, we showed him that man's mission was war. So far from bringing him the olive branch, we have brought him fire-arms and fire-water, and, what was worse, the diseases of lust, and an example in morals he has not been slow to copy. We speak of the failure of efforts to civilize, but we do not boast of the failure to exterminate. In the face of our relations with him, it ill becomes our humanity to say, that "the only good Indian is a dead one!"

Before passing any hasty judgment upon what civilization is pleased to call "the savage tribes" of this continent, it is worth while for a moment to look at the relations civilization has had with the savages. Tribal wars, we know, are of immemorial antiquity; but had the incoming of Europeans no influence in either extending them, or in adding to their ferocity? It would be easy to prove that the contrary is the fact. What, for instance, gave increased violence to the Iroquois' enmity to the Hurons, but the intermeddling, in 1615, of Champlain and his French following. In the early colonial days, settlement on the Atlantic seaboard was effected only after devastating wars had been waged upon the natives. What story is more harrowing in all history than that of Spanish settlement in Florida, or more revolting than the narrative of King Philip's War in New England? Nor do we find the records of Dutch colonization in New York State, or the contemporary history of Virginia, less full of horrors. Westward, the same tale of carnage is written over the face of the country. Let the reader recall the strife between the red man and the white in the region between the Alleghanies and the Ohio, and say on which side was displayed the greatest ferocity. But we need not go so far back in history for instances of inhumanity towards the Indian. To read the relations with the red man of recent border men in Kentucky, of Indianized white men in Texas, and of the traditional trader and cow-boy of the western plains, would curdle the blood of the most abandoned representative of modern civilization. In all the range and license of human passion, history has hardly greater atrocities to chronicle.

The blood of white men, it is true, has been freely outpoured by the hand of the Indian. But this blood has, in the main, flowed at the instigation of white men, to revenge themselves on their European rivals. In shedding it the Indian ally has not scantily shed his own. A recent American writer,* on Colonial relations with the Indians, bears testimony to this fact. Here are his remarks:

"During our whole Colonial and Provincial period it was the hard fate of the Indians to bear the brunt of every quarrel between the rival European colonists in their jealousies and struggles for dominion and the profits of the fur-trade. No sooner had one of the rivals conciliated or established friendly relations with one or more of the tribes, than the representatives of the other rival would seek to thwart any advantage of their opponents by openly or covertly forming alliances with other tribes. Tribes which might otherwise have lived in a state of suspended animosity towards each other were thus driven to take the war-path. So, too, it has happened that the whole or a portion of a tribe, or of allied tribes, in the course of a century was found in the pay and service of the French against the English; of the English against the French; of the Spaniards against the French; and of the French against the Spaniards; and then of the armies of Great Britain and our own Provincial forces against the French, followed in a few years by their enlistment by Great Britain to aid her in crushing the rebellion of her own Colonies."

The heat of these periods of conflict among Europeans on this continent has long passed, and we ought now to be just and humane enough to lay at our own doors responsibility for inciting the Indians to acts of savagery. There is the more reason for this, as these acts were mainly the result of our own follies and our own intrigues. It may be that, as Horace Greeley on one occasion wrote, "It needs but little familiarity with the actual, palpable aborigines to convince anyone that the poetic Indian, the Indian of Cooper and Longfellow, is only visible to the poet's eye." But while we divest the child of the woods of those fictional fascinations that have made him an interesting and picturesque figure in the world of western humanity, we are not called upon to paint him with the pigments of the pit, or to endow him with the attributes of fiends. No doubt the Indian, in mental characteristics, is alien to the

* "The Red Man and the White Man in North America." By George E. Ellis, Boston, 1882. (Page 346.)

European race, that his thoughts run in a different channel from our thoughts, and that he is a creature of instinct rather than of reason; but though of another mental type, it does not follow that we should visit upon him giant injustice, or that he should even forfeit his claim to considerate treatment at our hands.

The hapless General Custer once observed that, while he found much to interest him in the study of the Indian character, particularly in the wonderful power and subtlety of his senses, he was compelled to admit, from his intimate association with the red man, that he was essentially a savage; and that while civilization may and should do much for him, it can never civilize him. But this unfortunate officer lived among Indians who were the hunted of the earth, and whose every instinct was trained to its acutest sense, that their possessors might cunningly hold their own against men who were known to glory in the professional title of "Indian fighters."

How different is the judgment of Catlin, the great delineator of Indian character. Of the North American Indian, this great painter sympathetically, though frankly, writes that, in his native state, "he is an hospitable, honest, faithful, brave, warlike, cruel, revengeful, relentless, yet honorable, contemplative and religious being." He adds: "I have lived with thousands and tens of thousands of these knights of the forests, whose whole lives are lives of chivalry, and whose daily feats with their naked limbs might vie with those of the Grecian youth in the beautiful rivalry of the Olympian games." In another passage he affirms, that "they have learned their worst vices from contamination with Europeans," but withal that they are nature's noblemen, and deserve ever to be spoken of with sympathy, "as a people who are dying of broken hearts, and who never can speak in the civilized world in their own defense."

The truth is, that on this continent, as elsewhere among tribes living in a state of nature, opinions are formed about the aboriginal inhabitants pretty much as individual experience has enabled the writer personally to judge. This experience has been more or less determined by the attitude assumed towards them of the observer of their manners and customs. The mild Livingstone, travelling unarmed in the heart of Africa, has given us a picture of the native tribes of the Dark Continent altogether different from that of the bumptious, self-asserting Stanley, with his magazine rifle and explosive bullets. Similarly, in the western world, we have diversities of portraiture of our native tribes, limned according to the dispositions and bearing of the writers who have made their acquaintance. As with the white man so with the red, there are two sides to the Indian shield; each represents the Indian character in the mood in which you force the savage to look at himself. Take this one other, and a dispassionate, view of the Indian character from Jonathan Carver:

"That the Indians," writes he, "are of a cruel, revengeful, inexorable disposition, that they will watch whole days unmindful of the calls of nature, and make their way through pathless, and almost unbounded woods, subsisting only on the scanty produce of them, to pursue and revenge themselves on an enemy; that they hear unmoved the piercing cries of such as unhappily fall into their hands, and receive a diabolical pleasure from the tortures they inflict on their prisoners, I readily grant; but let us look on the reverse of this terrifying picture, and we shall find them temperate both in their diet and potations (I speak of those tribes who have little communication with Europeans) that they withstand, with unexampled patience, the attacks of hunger, or the inclemency of the seasons, and esteem the gratification of their appetites but a secondary consideration. We shall likewise see them sociable and humane to those whom they consider their friends, and even to their adopted enemies; and ready to partake with them of the last morsel or to risk their lives in their defense. The honor of their tribe and the welfare of their nation is the first and predominant emotion of their hearts; and hence proceed in a great measure all their virtues and their vices. Actuated by this, they brave every danger, endure the most exquisite torments, and expire triumphing in their fortitude, not as a personal qualification, but as a national characteristic." *

Parkman, the historian, with characteristic impartiality, extenuates Indian ferocity, in a passage in one of his works which goes far to tone down the harshness of his portraiture of native savagery. "The Indians," he says, "were not so bereft of the instincts of humanity as at first sight appeared. An inexorable severity towards enemies was a very essential element in their conception of the character of the warrior. Pity was a cowardly weakness, at which their pride

* Carver's "Travels through the Interior Parts of North America, in the years 1766-68," (page 409-12) London, 1779.

revolted. This, joined to their thirst for applause and their dread of ridicule, made them smother every movement of compassion, and conspired with their native fierceness to give a character of unrelenting cruelty rarely equalled."

Blood-thirsty, nevertheless, is the character Mr. Parkman has painted of the American savage when the European first comes in contact with him. Here again, however, the picture has its other side, as it reveals the fact, which is specially brought out by the historian in narrating the chronic feuds between the Iroquois and the Wyandot, that to the intrusion of the white man not a little of Indian atrocity is due.

A pleasing and gratifying contrast to the views we have presented regarding Indian character and European contact with the native tribes of the New World, is found in the relations which the early French and Spanish missionaries established with the red man. These relations were filial and fraternal until unhappily disturbed by the rude rivalries of the incoming European and the inter-tribal jarrings and jealousies that that event intensified and made more fierce. What amelioration of strife could be undertaken by the propaganda of the early missions was, we know, attempted, though with but small and feeble results. In the attempt, we see the Jesuit fathers in a guise far other than that with which the Protestant world has long regarded either the organization or the achievements of the "black robes." The meed of high praise is nevertheless theirs for the work they strove in the early history of this country to accomplish, and for what, in the form of records, they have left behind them testifying to the constancy and devotion of their labors.

To the French missions in North America founded by members of that great historic organization, the Society of Jesus, we chiefly owe our early acquaintance with the Indian tribes of this continent. In the voluminous records, known as the *Jesuit Relations*, which cover a period of forty years in the middle of the seventeenth century, we make our first detailed acquaintance with the almost superhuman efforts, alas, all too futile, to evangelize the native races of the New World. No more hapless story can well be related than that which sets forth the labors of the black-robe champions of the Cross in the once wilderness country lying north and east of the Great Lakes, and known to historical students as New France and Acadia. It is a story of hideous horrors, the outcome of the inappeasable enmity of the two rival branches of the great Indian family that were the chief factors in the long struggle between the French and English for empire on this continent. But it is, at the same time, a story sublime in its heroisms, in the enduring devotion and noble fortitude of the French missionaries throughout two centuries of toil and sacrifice, however narrow and even fanatical were their aims and principles.

With much of this story we have been made familiar, in the series of brilliant historical narratives, from the pen of Mr. Parkman, and particularly in the graphic volume on "The Jesuits in North America." Never was courage more devoted or toil more disinterested than is manifested in the records of these Jesuit missions. Parkman, almost alone of English-speaking historians, has attempted to do justice to the patient heroism of these early followers of Loyola; and no one more interestingly than he has let us see what difficulties were encountered, and what sufferings were unflinchingly and uncomplainingly borne by these wilderness crusaders in the vain effort to convert and civilize the savage. "Not the most hideous nightmare of a fevered brain," says the historian, "could transcend in terror the real and waking perils with which the Iroquois beset the path of these intrepid priests." What these perils were, we need here hardly relate, since they must be familiar to Mr. Parkman's readers, or perchance to those who know Dr. Gilmary Shea's "History of Catholic Missions." They include not only all the horrors incident to Indian ways of living at a time when the whole continent was a howling wilderness, but those which belong to savagery, inflamed by the passions engendered by inter-tribal strife and blown to white heat by the demon of fetichism.

A new and unique interest is now aroused in the story of these French missions in North America by the publication just entered upon, of a translation of the entire series of the "Jesuit Relations," hitherto inaccessible to English readers, save in detached portions, chiefly in the writings above referred to

of Mr. Parkman and Dr. Gilmary Shea. This important enterprise* has been spiritedly undertaken by a publishing firm in Cleveland, O. (The Burrows Brothers Company), under the editorship of Reuben Gold Thwaites, secretary of the State Historical Society of Wisconsin. The series, we believe, will consist of some sixty octavo volumes, embracing not only a reprint of the original Paris edition, the forty *Cramoisy* volumes (1632–72), now exceedingly rare; but also reprints of the earlier and later "allied documents," collected from various sources, with English translations of the French, Latin and Italian texts and enriched by illustrative notes.

The historical importance of this literary enterprise can hardly be overestimated, since the "Relations des Jesuites," which began, in 1632, to be regularly transmitted to Paris from the Superior of the Order in New France, are replete with information respecting the life and work in the colony of the indomitable Fathers, whose courage, perseverance and contempt of human suffering are among the marvels of an age of faith. Although a considerable portion of the records of their labors is occupied with incidents and reflections of a purely religious nature, since they were expressly intended to report the progress made in converting the Indians, there is a large amount of incidental information concerning the country and their travels throughout its vast solitudes, of the highest value in an historical and geographical point of view. The minuteness of detail is sometimes a little wearying, especially where the records deal with religious rites and ceremonies, in connection with the work of conversion among the tribes with whom they sojourned, and in whose inhospitable wastes they carried on their toilsome, hazardous and self-denying labors. But it was for this that the missionaries left the centres of civilization, amid the smiling plains and fruitful vineyards of old France, and undertook the thankless and often barren task of inculcating Christian doctrine among the aborigines of this continent who, at times, were not men but devils.

It is in Acadia (Nova Scotia) that the annals of the Jesuit missions on this continent properly begins. Here among local tribes of the Algonquin family — the Abenakis, Etchemins or Canoemen and Micmacs — the Jesuit Fathers, Enemonde Massé and Peter Biard, began their labors in 1611 in the little colony at Port Royal that had been settled by the Huguenot De Monts, and was now held under his patent by the Sieur de Poutrincourt. Having acquired something of the Micmac tongue, the Fathers succeeded in making a convert of the Sagamore Membertou, who was afterwards to figure prominently in New England history. Unfortunately the relations between the black robes and Biencourt, a son of the patentee Poutrincourt, were unpleasant and the fathers joined Père Quentin and a lay brother, Du Thet, on Mount Desert Island, only, however, to meet disaster from the English expedition of Argall from Virginia, which presently made its descent upon the Acadian coast. The mission received its first baptism of blood, in the death of Du Thet, while the Fathers were taken captive, though afterwards they were released and returned to France. Later on, other missions in Acadia were founded, one by the Récollets at the mouth of the St. John River, and another on Cape Breton; while the Jesuits succeeded in establishing stations on the Penobscot and the Kennebec, which, up to the period of the fall of Quebec, met with some measure of success. It is of the Port Royal Mission that the first volume of the "Jesuit Relations" in the main treats, with an admirable introduction to the series by the scholarly editor-in-chief.

The founding of the Quebec missions is due primarily to the Récollets, a branch of the Franciscan Order, who came to the French settlement on the St. Lawrence at the instance of Champlain, the founder of Quebec and the first governor of the French colony. The Récollet friars were hardly equal, however, to the task set before them, and ten years later (in 1625), they called in the aid of the Jesuits, who, with ample means, supplied them by titled wealth in France, laid the foundations of the ecclesiastical system which in after years was to grow to immense importance in the still French-speaking province. Among the members of the latter order to arrive at Quebec, besides Massé, of the dispersed

*"The Jesuit Relations and Allied Documents: Travels and Explorations of the Jesuit Missionaries in New France, 1610–1791." Vol. I. Cleveland, O., 1896.

Acadian Mission, were the two zealous Fathers who were afterwards to win martyr crowns in the country of the Hurons —Charles Lallemant, and the Ajax of the French missions, the giant-statured Jean de Brébœuf. Out of this Quebec Mission grew those established among the Montagnais Indians at Tadoussac, at the mouth of the Saguenay, and at Three Rivers and Sillery, on the St. Lawrence, besides the important mission founded in 1641–42 by M. de Maisonneuve at Ville Marie (Montreal).

Three other notable missions chequered the history of France in the New World throughout its century and a half of dominion on the American continent. One of these was the Huron Mission, of tragic memory, founded by the Récollets in 1615; the Ottawa Mission, an outpost of the Huron, which extended from the Ottawa River westward to the country of the Chippewas, in the neighborhood of the St. Mary River; to Lake Superior; and through the territory of the Sacs and Foxes, to the banks of the then distant Mississippi. Another ecclesiastical outpost was the Iroquois Mission, first entered upon by the Jesuit Father Jogues, whom the Iroquois mutilated and tortured, but who was afterwards rescued by the Dutch. With Jogues was Father Bressani, who had been taken captive on his way to the Huron country.

Still another mission was the Louisiana outpost of the French Church at Quebec, first entered upon during the Chevalier La Salle's expedition to the mouth of the Mississippi, and ministered to by Capuchins and Jesuits, chiefly at New Orleans and Natchez. Attached to this in the latter years of the seventeenth century was the Illinois Mission among the Arkansas, Yazoo and Choctaw tribes, but of these distant missionary enterprises the documentary results are so slight that they form no part of the "Relations" sent from Quebec to the general of the Jesuit Order in Old France.

The French missions in Canada were in 1629 interrupted by the surrender of the French colony on the St. Lawrence to the English, under the Kirkt Brothers, and were not resumed until 1633, when Champlain and the black robes returned to the country. From that date we find reports of their work in regular annual succession to the year 1673. It is these reports that are now being reprinted with translations, together with some irregular issues, at lengthened intervals, to the year 1791, when the Jesuit Order fell into disrepute in the chief courts of Europe and was for a time suppressed, and even placed under the ban of the Pope. In Champlain's day the Jesuits had not, in New France at least, become a political propaganda. Their work they found not in courts, or in churches and monasteries, but in the wilderness; and in a veritable wilderness do we find them displaying, towards the benighted savages they sought to convert, those qualities that have won for their work at this early era the respect and admiration of all who reverence unexampled faith and undaunted heroism.

We come now to the brief mention of the Huron Mission, at once the most successful and, in its sequel, the most disastrous of all enterprises which have had for their object the spiritual conquest of a continent. The Huron Mission continued for the space of thirty-four years (1615–1649), and employed, first and last, in its work, the energies of twenty-nine missionaries, of whom seven lost their lives, most of them under circumstances of appalling atrocity. The first black robe to visit the Hurons was Joseph Le Caron, a Récollet, who came to the Huron country, in the neighborhood of the Georgian Bay, with Champlain, in his adventurous voyage in 1615 up the Ottawa, thence, by way of Lake Nipissing and the French River, to the inland sea of Lake Huron. The expedition was an ill-starred one, owing to the fact that Champlain, while he sojourned in the Huron country, was induced to join the Hurons in a raid upon the Iroquois cantons in the valley of the Mohawk River, an act of such impolicy as to bring upon the devoted French colony on the St. Lawrence the lasting enmity of the great Indian confederacy. The Mission at first met with only a modest success, though other friars joined it, among whom was Gabriel Sagard, the Récollet historian. In 1626 it, however, received a great impulse through the arrival, in the Huron field, of the Jesuits Lallemant and Brébœuf, the former the intimate friend and spiritual adviser of Champlain, and the latter the most remarkable, perhaps, of all the Canadian missionaries.

Other workers in the Huron field were

Joseph Daillon, Antoine Daniel, and Pères Jogues, Chabanel, Davost and Garnier. The Fathers distributed themselves among the several Huron villages, then estimated to contain a population of about 20,000 souls. Some sought to extend the sphere of their labors to the neighboring tribe of the Neutrals, and even reached Sault Ste. Marie after toilsome journeyings. The chief Huron missions were established in the region lying between Lake Simcoe and the Georgian Bay, having for their headquarters a stockaded post on the River Wye, close to the present Canadian town of Penetanguishene. Here the Fathers toiled with unwearying persistence, suffering untold things from famine and pestilence for the cause, and not a few of them meeting death by raiding warparties of the Iroquois or in overcoming the difficulties of the long and toilsome river voyage from Quebec.

In the introduction to the English translation of the *Relations*, the editor thus describes the authors of the journals which formed the basis of that work, and points to what they had to contend against in pursuing their exacting and often perilous labors. For the most part, writes Mr. Gold Thwaites, the fathers were "men of trained intellect, acute observers, and practised in the art of keeping records of their experiences. . . . These first students of the North American Indian were not only amply fitted for their undertaking, but none have since had better opportunity for its prosecution. They were explorers, as well as priests. . . . Many of the *Relations* were written in Indian camps, amid a chaos of distractions. Insects innumerable tormented the journalists; they were immersed in scenes of squalor and degradation, overcome by fatigue and lack of proper sustenance, often suffering from wounds and disease, maltreated in a hundred ways by hosts, who, at times, might more properly be called jailers; and not seldom had savage superstition risen to such a height, that to be seen making a memorandum was certain to arouse the ferocious enmity of the band. It is not surprising that the composition of these journals of the Jesuits is sometimes crude; the wonder is, that they could be written at all. Nearly always the style is simple and direct. Never does the narrator descend to self-glorification, or dwell unnecessarily upon the details of his continual martyrdom; he never complains of his lot."

The hopes of the missionaries received a crushing blow, in the summer of 1648, in the Iroquois attack on the Huron frontier town of Teanaustayé. In this frenzied raid of the implacable Iroquois, Father Daniel lost his life while standing, in the rich vestments of his sacred office, at the door of the St. Joseph Mission, shielding the women and children converts who had taken refuge in the chapel from the fury of the foe. Eight months afterwards, in the dead of winter, the Huron settlements ring with a more woful cry "that the Iroquois are again upon them!" The towns St. Joseph and St. Louis are instantly given to the flames, and at the latter mission Lallemant and Brébœuf, with thousands of the natives, meet a martyr fate. The delicate and gentle Lallemant, with an almost divine passion, strove heroically to set before his stricken flock an example of fortitude and devotion; but it was reserved for his robust-framed and lion-hearted companion to withstand to the utmost the fiendish tortures of an awful martyrdom. On Brébœuf the Iroquois inflicted every ingenuity of torture. They mutilated, beat and scorched him; they then poured boiling water upon his head, and hung around his neck a collar of red-hot hatchets. After this, they seared his lips, tore out his tongue, and disembowelled him; finally, they fastened him to a stake and roasted him.

With like atrocity they scalped, tomahawked and burned every Huron who was unable to fly for succor to Ste. Marie or find a covert in the neighboring woods. So fell was the fiendish work that but a remnant of the Huron nation escaped, while the missions were entirely abandoned. A few of the Fathers, with a handful of their surviving converts, found refuge for a time among the islands of Lake Huron; but they ultimately withdrew from the region, and, after incredible suffering, and with still diminished numbers, sought refuge in the fortress asylum of Quebec. Thus ended the Huron Mission, and in such an Iliad of woe do we see what in early days European contact meant with the American aborigines.

G. MERCER ADAM.

STUDIES IN ENGLISH LITERATURE:

MACAULAY AND THE CHARACTERISTICS OF HIS WRITINGS

THOS. BABINGTON (Lord) MACAULAY, one of the greatest masters of English prose, was born at Rothley Temple, Leicestershire, October 25th, 1800. His father, Zachary Macaulay, was intimately associated with Wilberforce in the emancipation of the West Indian slaves. To him, it is more than probable, the son was indebted for the sterling integrity and sturdy manliness of his character; while to his mother, a most amiable lady of Quaker descent, he no doubt owed his affectionate and kindly disposition. Macaulay early in life gave promise of winning a notable name. As a boy he was precocious and self-confident, though he justified these characteristics by ceaseless reading, by the assiduous cultivation of his mental faculties, and by the exercise of a memory phenomenal in its strength.

On leaving Cambridge Macaulay studied law; but though he was called to the bar he never practiced the legal profession. Literature was his lode-star, and in the arena of letters he had already achieved a name. His early contributions to "Knight's Quarterly" had been well received; but public attention was first specially directed to the young writer by his article in the "Edinburgh Review" on Milton. This essay was the first of that long series of brilliant contributions to the "Whig Quarterly" which earned for that periodical its reputation and won for their author undying fame. Meanwhile politics was putting forward a rival claim for a hold on Macaulay's talents. Through the influence of Lord Lansdowne he was, in 1830, returned to Parliament, and for the next four years he took an active part in the stirring scenes of the Reform Bill era. He was a Liberal in politics, and his vehement oratory and great powers of work were of much service to his party at this critical period of Parliamentary history. In 1832 he was appointed a Commissioner of the Board of Control, which represented the Crown in its relation to the East India Company, and two years afterwards he was nominated a member of the Supreme Council of India. To his residence in India, and the impress it made upon the writer's mind, we doubtless owe two of the most brilliant essays in the language.

Returning to England in 1839 Macaulay again entered Parliament, but now as member for Edinburgh, and for a number of years he had a seat in the Cabinet. Laborious as were his ministerial duties, he yet found time to pursue with unflagging ardor his literary work. The essays on Lord Clive and Warren Hastings are the product of this period, as are those admirable specimens of "rhymed rhetoric," the "Lays of Ancient Rome." But alternate legislating and electioneering were not favorable to literary composition, and Macaulay was ambitious to do more than write essays and compose verse. He had long cherished the idea of writing a History of England; and, fortunately for literature, Parliamentary defeats and loss of office gave him the leisure, though now late in the day, to put his wish into effect. From now to the close of his life, with a brief interruption incident to his temporary return to politics, Macaulay threw his whole heart into the writing of his History. Few Englishmen were at the time so deeply versed as he in the country's annals; and none had hitherto hit the idea of making history popular, or were able to treat it with such picturesque effect. Alas! he lived to see but four volumes published; the fifth, a fragment, was not issued until after his death.

The publication of the first instalment of the History, says Mr. Trevelyan, his biographer, "was greeted by an ebullition of national pride and satisfaction;" the success of the work, as a whole, was unprecedented. Nor can we wonder at this result, for, fragment as it is, and more or less marked by partisanship, literature has no richer treasures of historical portraiture, nor have the annals of any people been written with greater dash and spirit or with more sustained effort. The second instalment of the work, published in 1855, elicited even greater interest than did the first, and was received with marks of unqualified approval. The fifth and concluding volume appeared posthumously, for, at the close of 1859, the brain that had woven the wonderful

fabric had ceased its functions. Its author died Baron Macaulay, and on the 9th of January, 1860, his remains were interred with impressive pomp in the Poets' Corner in Westminster Abbey.

The social aspects of Macaulay's life present some very lovable traits. * His attachment to his sister, Lady Trevelyan, and the fond indulgence of a bachelor-uncle to her children, are prominent features in his biography, and pleasingly attest his affectionate disposition and warmth of heart. The "Life and Letters," by his nephew, Mr. Trevelyan, is one of the most admirable biographies in the language, and should be read by all admirers of the great historian, orator and essayist.

Macaulay is the most pictorial prose writer in English literature. His power of graphic narration has rarely been equalled and never surpassed. With wide and accurate knowledge, and the faculty of readily bringing it to his aid, he has enriched the literature of history and biography with scenes and studies that bid fair to have perennial life. He was a typical Englishman, and his writings, both historical and literary, deal with subjects that interest the national mind and enlist the sympathies of the national heart. This is particularly the case when he treats of England's military heroes. Into these figures he infuses life and vigor, and their going and coming is as the tread of armèd men. His power of reproducing the past is great, and the impression he leaves on the mind of the reader is vivid and lasting. His work always tells, for it is hearty and genuine. Nor is it ever timidly put forth, but invariably with confidence and conviction. In not a few instances this leads him into error, and gives a color to his statements that does injustice to facts. But the error is an unwitting one, and is often but the exaggeration of truth. At times one has to stand off from his work to get its proper focus, and to see his facts out of the glare of his rhetoric. But he has painted many striking pictures, and imbued with fresh life many forgotten incidents and memorable figures of the past.

The characteristics of Macaulay's style are strength and clearness. It is said that he never wrote but one obscure sentence in his life. With equal truth it may be affirmed that he never penned a weak one. In reading Macaulay one often sighs, indeed, for an hour of languor, and for a passage of quiet repose. But there is as little of repose as there is of emotion. The tenderness that was in his nature he never imparts to his books. We have the firm hand of the robust rhetorician, but never the soft touch of the idealist or the poet. Macaulay has no acute sensibilities, and hence in his writings there is little of humor and less of pathos. Yet every page is instinct with life, bright with color, and affluent of illustration. From every nook of literature he brings something to enrich his narrative and ornament his work. But decoration is not thought, still less is it philosophy. Macaulay is too practical to philosophize, but he never fails to stamp on our minds the image of his work. And this he does with consummate skill. Not only are his facts inexhaustible, but inexhaustible also are the resources of his art. On his canvas there may be daubs of color, but the man and the scene he sets out to paint he always succeeds in making live before one. The process may be mechanical and the details too minute, but the result nevertheless is art.

The Indian essays exemplify both the merits and the defects of Macaulay as a writer. Though somewhat overloaded with ornament, their narrative is clear-cut, forcible and brilliant. They display vast and varied knowledge, and are enriched with apt, if profuse, illustration. But Macaulay rarely brings out the deeper significance of events, and seldom looks into the heart for the motive of his actors. To the ordinary reader this is concealed by an animated style, and by a florid and abundant rhetoric.

Macaulay's fondness for antithetical writing often detracts from his sense of justice, and leads him unfairly to praise one man by defaming another. In his judgments, moreover, he is more frequently guided by precedent than by principle, his memory gaining the advantage over his sense of right. In one other respect his work is defective: as the artists say, his pictures want atmosphere; he gets too near to the canvas, and, consequently, there is a lack of perspective. But despite these defects, Macaulay is a great and attractive writer.

G. M. A.

* See Encyclopædia Britannica, vol. XV., p. 129.

THE FRENCH REVOLUTION: AFTER-HISTORY.*

WITH the death of Robespierre, the Terror came to an end. A great revulsion of feeling took place. The Commune was broken up, and "the Mountain" asserted its independence of the Committees. The prisons were emptied, the cruelties of Nantes stopped. Even to the rebels an amnesty was offered. The Jacobin Club was closed in January, 1795. Liberty of speech and action was restored. No one was found to defend the tyrants.

Reaction

The War

The French arms had prospered abroad, and the whole course of the Rhine was in French hands. In the winter of 1794–95 Pichegru conquered Holland, which Louis XIV. had never been able to do. Holland and Belgium were to become republics on the model of France. In Brittany, the Chouans were suppressed; but although the Vendéans were beaten, they would not submit until conciliation was tried. Several of the Powers drew out of the coalition against France. The Dutch ceded Flanders; Prussia the left bank of the Rhine; the King of Spain fell away; Portugal, Naples, the Papacy, and other Italian powers made advances to France. England and Austria alone stood firm.

The Revolt of 1795

Affairs, however, were very serious in Paris. There was great scarcity prevailing, and the people were led to believe that there was no necessity for it, and they broke out into insurrection on April 1 and again on May 20. There was no difficulty in suppressing the tumult. The Royalists, thinking that the reaction gave them their opportunity, rose in the south of France and committed great barbarities, murdering multitudes of their enemies savagely and indiscriminately. Even the army seemed to grow doubtful. Yet the feat of Hoche in crushing the English in Quiberon Bay shed a lustre on the period, dimmed, however, by the shooting of 711 *émigrés*, and by the reprisals of the other side, which put to death 2,000 Republican prisoners in cold blood.

New Constitution

The constitution of year III. of the Republic was the work of the restored Girondists. It set up a modified Republicanism, entrusting legislation to two councils, the council of the ancients, a kind of senate, consisting of 250 persons, 40 years of age and upwards; and the council of 500, men of 30 years and upwards, who initiated legislation. The executive power was entrusted to a directorate of five members, under whom should be responsible ministers, and all the machinery of government. The rights of man were reaffirmed. The new scheme was accepted by the Convention, and generally approved by the country. The Royalists attempted (October 5, 1795) to overthrow it, and almost succeeded in effecting a counter-revolution; but the resolution of the commander on the Republican side swept away the ill-compacted ranks of the Royalists. That officer was Napoleon Bonaparte. Readers of Mr. Carlyle's history are not likely to forget the command that issued from the bronze lips, and the "whiff of grape-shot." The marks of the shot were long, perhaps are still, seen on the walls of the Church of St. Roch. This man is now, for a great many years, to become a central figure in France, in Europe, in the world.

Bonaparte

Napoleon Bonaparte was born in Corsica, August 15, 1769, two months after the cession of the island to France. He very early betrayed signs of his future tendencies and powers, reading with great eagerness Cæsar's Commentaries and Plutarch's Lives. In 1785 he was at the military school at Paris, where he learned to detest the old régime. In the following year

* In addition to the references prefixed to the earlier section of this article, in the May number of SELF CULTURE, the student reader is recommended to consult Prof. Sloane's new "Life of Napoleon Bonaparte," and the standard biographies of the great emperor — by Bourrienne, Lanfrey, and Taine. An entertaining anecdotal memoir is that by Montgomery B. Gibbs (The Werner Co., Akron, O., Chicago and New York). Thiers' "Consulate and Empire," and Taine's "Contemporary France" (the Modern Régime), should also be studied. A compact and useful manual is Morse Stephens' "Periods of European History," 1789–1815. For the history of the Second Empire, see Blanchard Jerrold's "Life of Napoleon III.," and for a witness's account of the *Coup d' Etat*, see Victor Hugo's "History of a Crime." See the E. B. for biographies of Hoche, Barras, Louis Philippe, and Napoleon III.

he entered the army. He at once took the side of the Revolution. In 1792 he was ejected from Corsica, and in 1793 became a captain of artillery and was charged to put down the Federalists of Marseilles, which he did. At the siege of Toulon he secured the fall of the town, and was made a brigadier-general, when only twenty-four. In the same year (1794) he was made commander of the artillery in Italy There his splendid genius wrought a kind of revolution in military affairs, and secured the success of the campaign, so that within a month France was mistress of the Alps. He thus became a great favorite with the Robespierres, the younger of whom then had command of the army in Italy. He had no great faith in their continuance in power, and took care not to commit himself to their policy. By this means he escaped, when they fell. For some time he was out of favor with the authorities, but when Barras (October, 1795) had need of a vigorous artillery officer for the streets of Paris, he chose Bonaparte. His promptitude in crushing the insurrection assured his future; he was made general of division and commander-in-chief of the army of the Interior at the age of twenty-six.

The Directory

The Directory came into office with the new constitution on October 28, 1795, and lasted four years. Four of the directors were Republicans of good characters. Barras was a noble and suspected of reactionary tendencies. They did their best for the finances of Paris, abolished the Commune, and created an army for the Interior. Confidence returned, and although it was felt that the government was provisional, all men wanted peace. The middle class were the strength of the movement, the Republicans being weak, and the royalists looking up, if they had possessed a capable leader. But the Count of Provence (afterwards Louis XVIII.), although of good qualities, lacked power; and his brother, the Count of Artois (afterwards Charles X.), was a despicable sort of person, incapable of anything considerable. The Vendéans would have risen again, had he been willing to venture anything. By April, 1796, the rising was over. On the other hand, the Terrorists had made an attempt to overthrow the government, but they were easily suppressed, and with little bloodshed.

Foreign Wars

As the Directory prospered at home, so the French arms were successful abroad. Carnot, the "organizer of victory," now planned a great attack on Austria, one of the two Great Powers that would hear of no terms of reconciliation. Bonaparte took command of the army of Italy, Jourdan commanding on the Sambre and Meuse, and Moreau on the Rhine and Moselle. Bonaparte at once assured his soldiers that they would speedily find "honor, glory and wealth," in the plains of Italy, "the richest plains on earth." Before long he had his army between those of Austria and Sardinia, thus obtaining the neutrality of the latter and the cession of Nice and Savoy to France. He then crossed the Po, and won the great victory at the bridge of Lodi (May 10, 1796), and took possession of Milan. Here he began his system of plundering the galleries of Europe, which he carried on to the end, sending some of the old masterpieces to Paris. The Directory were a little doubtful of the aims of the young conqueror. When, however, they ventured to interfere with his plans, he threatened to resign, and his popularity in Paris made it impossible for them to accept his resignation.

The Italian States were speedily humbled, the Austrian army, under Beaulieu, was driven back towards the Tyrol, and even the Pope signed an armistice. When, however, 40,000 Austrians under Wurmser came down into Italy, the States which had submitted to the French turned against them. Bonaparte, nothing daunted, turned upon Wurmser and drove him out of Italy with immense loss, hoping to effect a junction with Moreau in Bavaria. Wurmser, however, got fresh troops, and hoped to make a stand against the French and free Mantua; and Bonaparte, who had reached Trieste on his way to Innsbrück, hastened back, defeated Wurmser at Bassano, and shut him up in Mantua by the middle of September. Superior forces were poured down upon him from Germany, but they were unavailing against his splendid military genius, seconded by that of his officers. By several victories he destroyed the power of Austria in Italy, secured the fall of Mantua, and led to the capitulation of Wurmser.

The Pope

But Bonaparte was not content to drive out the Austrians and make the principalities of Italy subservient or non-resistant. He next took the Pope in hand (Pius VI.), constraining him to sign the treaty of Tolentino, agreeing to pay a heavy subsidy, ceding Avignon and the Venaissin to France, and the Romagna with Bologna and Ferrara to the friends of France in the Milanese. He was also made to give up a hundred of the chief works of art in Rome, and these were sent to Paris. Bonaparte next signed a treaty of peace with Spain. In all these things he acted on his own judgment, without regard to the government at home. Bonaparte's successes were made the more conspicuous by the failures of the armies on the Rhine and in Germany, and of the expedition led by Hoche for the invasion of Ireland.

Austria, 1797

Bonaparte now determined to humble Austria by marching upon Vienna. Strengthening the army on the Rhine, he advanced northward in spite of the opposition of the Tyrolese and the attitude of hostility shown in his rear by Venice. In April (1797), he penetrated as far as Leoben, in Styria, and his outposts were advanced within easy distance of Vienna. The Austrians were not prepared for this sudden attack; their armies were scattered or distant, and the Emperor signed (April 18) the "Preliminaries of Leoben," drawn up by Bonaparte on his own authority. By this document the Austrians ceded to France, Belgium and the left bank of the Rhine from Basel to Andernach, as well as Lombardy, which was to be an independent state. By this time Hoche and Moreau had thrust the Austrian armies on the Rhine back into the Black Forest, when hostilities ceased for the present.

Venice

Bonaparte had not forgotten the attitude of the great oligarchy on the Adriatic. An insurrection in Venice gave him the opportunity he desired for intervention. The French were, of course, an object of detestation to the Senate, but were favored by the community at large. Bonaparte set up a Democratic government after the Republican model. Genoa, under the title of the Ligurian Republic, became the ally of France. So great was the influence of these conquests and successes that even Pitt made serious proposals for peace.

Royalist reaction and "Coup d'état"

Still, things were not altogether prospering in France. Corruption had reached the Republican institutions, finances were not in a good condition, and the elections of the year V., which renewed one-third of the two councils (May, 1797), showed that public opinion was veering around to Royalist sentiment. Here and there a "white terror" broke out. A reaction took place in the Directory. The doings in Italy were censured; it was reported that Louis XVIII. would be proclaimed. But they had to reckon with the armies, which were far from being Royalist. The Directory recalled Hoche and asked Bonaparte for one of his generals. Augereau, whom he sent, and Hoche carried out the "coup d' état" of the 18th Fructidor (September 4, 1797). The soldiers occupied Paris with cries of "Long live the Republic," Barthélemy was arrested, and Carnot fled. The majority in the councils was overthrown, fifty of them were banished, and measures of severe repression adopted, without much bloodshed. Laws favorable to the Royalists were repealed and the party crushed. Hoche, the hero of Quiberon and of the *Coup*, who had received the sole command on the Rhine, now died at the early age of twenty-nine, not without suspicion of poison. He left behind him a reputation without a flaw.

Treaty of Campo-Formio

The Directory gave effect to the preliminaries of Leoben by signing the Treaty of Campo-Formio, but broke off negotiations with England. Bonaparte now returned in triumph to Paris with the title "General of the army of England." France was almost at his feet, looking upon him as an instrument for humbling the monarchies of Europe and bringing glory to the Republic in France. He, on his side, soon conceived the idea of becoming master of France. The arbitrary measures taken to suppress the Royal reaction, the neglect of the will of the majority, the consequent restrictions put upon the liberty of the press were all preparing for the destruction of popular freedom and the establishment of an autocracy.

The Directory unpopular The elections of the year VI. showed that the Directory was losing hold of the people, giving a decided majority in favor of Republican principles. Another "coup d'état" took place, but this time against the Republicans. Instead of a general they put a lawyer into the Directory, as if to show that they had no need of the army. At the same time they refused the terms offered by Pitt and seemed desirous of war. They were eager for the establishment of Republican institutions all over Europe and rejoiced at the overthrow of the papal government and the setting up of a Roman republic (February, 1798), and of a Helvetic republic in the same year, replacing the aristocratic government.

England Preparations were now made for war with England. Ireland and India (with Tippoo Sahib in Mysore) seemed equally inviting, or should they invade England at once? Bonaparte, who was living quietly in Paris, proposed to the Directory to conquer Egypt. It would not be difficult of achievement, it would furnish an excellent colony for France, and it would be a blow to English commerce. "We can destroy England in Egypt," said Bonaparte. "We can get this terrible man out of France for a time," thought the Directory. So he was furnished with a great fleet and army, and Talleyrand was sent to Constantinople to assure the Sultan that no harm was meant to Turkey.

Egypt Bonaparte sailed from Toulon (May 19, 1798), took Malta without difficulty, escaped the English fleet under Nelson, landed in Egypt, and sent Kléber forward to capture Alexandria. Leaving him to garrison the city, he marched on Cairo, telling his soldiers of the "forty centuries that looked down upon them from the pyramids," and entered Cairo in triumph. All Egypt fell into his hands at once, and he was preparing to organize the government of the country when he received news of the defeat, by Nelson, of the French fleet in Aboukir Bay on the night of August 1st. The English suffered severely, but only four French ships escaped, so that it was the destruction of their navy. It was a serious position for the army which was depending upon the navy for its provisions.

Coalition against France Talleyrand had not gone to Constantinople, knowing the uselessness of such a step, and the Sultan was by no means satisfied with the explanations of the French. Entering into alliance with England and Russia, he declared war, and Austria, seeing this new coalition, began to reconsider the concessions she had made in her hour of weakness. The Italian republics, having found French promises of liberty illusory, seemed inclined to take the same side. It was a serious moment for France; finances were in a bad condition, the Directory was unpopular, and Bonaparte was in Egypt. The navy of Spain, the only ally of France, had been destroyed by Admiral Jervis a year before. As a first measure, the Directory passed the law of the Conscription, by which every Frenchman was required to be a soldier from the age of twenty to twenty-five. A levy of 200,000 was ordered at once; war was begun in Italy, and before the end of the year the whole country was in the hands of the French.

French reverses Some German successes rendered the princes of the Empire confident, and they ordered the French envoys to leave the country. Their assassination on the way by Austrian hussars raised the indignation of the French, and men rushed to fill up the ranks of the army. Yet things did not go well with them on the Rhine or in Italy. Joubert was defeated by Suwaroff at Novi (August 15, 1799); and the chief cities of Italy fell into the hands of the allies. They prospered no better elsewhere. The Dutch fleet had gone over to the English; an expeditionary force sent to Ireland was captured; Minorca was taken and Malta blockaded by the English; the Ionian Islands were captured by the Russians. Even Bonaparte had been defeated by Sir Sidney Smith at St. Jean d' Acre. Tippoo Sahib, the friend of France, was killed at Seringapatam (May 4, 1799). The Directory was accused of having sacrificed Bonaparte, and the Councils took matters into their own hands, and things fell generally into disorder.

Return of Bonaparte Bonaparte had been cut off from France by the loss of the fleet, and knew little of what was going on at home. When he learned the state of affairs, he stole away, leaving

the army under the command of Kléber. When he reached Paris (October, 1799), with the glory of the victory over the Turks at Aboukir (July 24) still upon him, better news was coming in from Switzerland, Bavaria and Holland. His arrival was hailed with enthusiasm. People were weary of the rule of the mediocrities, and the name of Freedom furnished no compensation. Bonaparte understood the situation, called around him the moderate men, the largest in number in the country, and prepared to act as Dictator. There was some resistance to his plans, but the soldiers, under his influence, expelled the Council then sitting at St. Cloud (November 10, 1799). The Directory was suppressed, and three Consuls appointed provisionally in their place, namely Napoleon Bonaparte, Sieyès, and Roger-Ducos. Two commissions were appointed to revise the Constitution.

Constitution of Year VIII

The Constitution of the year VIII. was put forth December 13, 1799. There were to be three consuls, named for ten years, and eligible for re-election. The real power belonged to the First Consul, since he alone could promulgate laws, name ministers, ambassadors, and officers generally, while the other two had only a consultative voice. A council of state, nominated by the First Consul, was to have the drawing up of all laws, which should be submitted to a tribunate of a hundred members. This body was to pass the measures on to three orators who should discuss them with three counsellors of state nominated by the government. This took place in the presence of the legislative body which accepted or rejected the proposed laws by a secret vote and without debate. The legislative body consisted of three hundred members. Finally a senate of eighty life members was to confirm or annul all acts referred to them on grounds of their constitutional character. They were also to nominate the consuls, tribunes, and legislative body, from a list of five thousand names, chosen by fifty thousand persons, and these chosen by five hundred thousand electors, who were to be elected by universal suffrage. Senators, on a vacancy, were to be elected by coöptation from a list of three candidates presented by the legislative body, the tribunate, and the First Consul. The constitution was adopted by an almost unanimous plébiscite.

The Three Consuls

Bonaparte was First Consul; the other two were Cambacérès, a distinguished lawyer, and Lebrun, an elderly man of business. The Senate was filled with distinguished men. The liberty of the press came to an end; only thirteen journals, and these subservient to the government, were allowed. It was a tyrannical, cruel, and corrupt system, yet it fascinated France, and its idea has lived on almost to the present day. The First Consul took up his abode at the Tuileries, having for ministers — his brother Lucien for the home office; Gaudin for finance: Berthier for the army; Talleyrand for foreign affairs; and Fouché for police. The First Consul was supreme. Prefects were set over all the departments, with subprefects of less authority. The prefects named the local mayors, so that the whole system was well compacted. The financial affairs of the country were conducted with order and precision, and prosperity was the result. The First Consul wrote direct to George III. (ignoring English constitutional usage), offering to make peace. Pitt replied, refusing until the ancient dynasty should be restored. Bonaparte's position was thus strengthened. Russia made peace; Prussia stood neutral. Austria and England, with Bavaria and Würtemberg, remained hostile.

War in 1800

War was waged on the Rhine and in Italy, when the great battle of Marengo (June 14, 1800), decided the campaign. "In it the Austrians lost all they had gained in eighteen months and by twenty victories." But Austria would not give in. On December 2, Moreau, supported by Ney, gained the battle of Hohenlinden, not far from Munich, and Austria had to sign an armistice. Another with Naples closed the war, the peace of Lunéville being concluded between France and Austria (February 9, 1801), on terms similar to those of the treaty of Campo-Formio. The Pope was replaced and Tuscany was ceded to France.

English Naval Power

England alone maintained her opposition to Bonaparte, and her dominion of the sea made her a dangerous enemy. A com-

bination to destroy her naval power was formed by Denmark, Sweden, Russia, and Prussia, who invited France to join them, to the great satisfaction of the First Consul. Parker and Nelson were sent into the Baltic to break up the coalition. Denmark had the readiest fleet, and therefore Nelson determined to strike at Copenhagen, which led to an armistice, and the assassination of the Czar. Paul I. brought the coalition to an end. Before the middle of the year the northern Powers were again in alliance with England, and Bonaparte found his design of invasion impracticable. By the peace of Amiens (March, 1802), England was secured in her command of the sea and her possession of India. But France remained supreme in Central Europe.

Reconstruction The Code Napoléon, issued January, 1804, and largely due to Bonaparte himself, was the greatest work of this period. In all his methods he disguised the arbitrary and autocratic character of his government, and many of his measures were wisely framed. He made peace with the Pope, and by the Concordat reconstructed the Church of France. All the old divisions disappeared. The First Consul and the Pope (Pius VII.) erected ten archbishoprics and fifty bishoprics, and ended the schism among the clergy, the constitutional priests being sacrificed, so that the Royalists and the opponents of the Revolution got the chief rewards. The emigrants were now permitted to return, and in large numbers took the oath to the new government. Bonaparte afterwards regretted the restoration of these malcontents to France. His motive was to have something "between the people and the Powers." With a similar motive he undertook to reorganize education and to set up a university, as a means of unifying and centralizing instruction in France, making the high schools or *Lycées* all dependent on the university. Next came the institution of the Legion of Honor, as a means of attaching men of distinction to the government. Finally, a new constitution, prepared by the First Consul, was unanimously accepted (August 4, 1802), strengthening his position and weakening all constitutional influence.

Second War with England Bonaparte did not forget the predominance of England by sea, and began to strengthen himself on this element and to interfere in matters which England regarded as peculiarly her own. Consequently, she proclaimed war against France in the spring of 1803. Again Europe was divided into two camps. Prussia held aloof, but Russia sided with England. Austria, unable to give assistance, sympathized with England. A conspiracy was formed in France, of which Bonaparte took advantage, and had himself proclaimed Emperor of the French (May 18, 1814).

The Empire To proclaim the Empire was to assert an overlordship over other princes and kings. It was to take the place of ancient Rome and its Imperator, who was regarded as Master of the world. Consequently Napoleon declared himself to be not the successor of Louis XIV., King of France, but of Charlemagne, who was Roman Emperor.

War As Napoleon could not get at England, he directed his chief attack on Austria, and on December 2, 1805, he won the great victory of Austerlitz, and peace was concluded between France and Austria (December 26). But two months before this the battle of Trafalgar had put an end to the naval power of France (October 21,) and left England free to take her own course. France, in building up the Confederacy of the Rhine, restored Hanover, which had been seized during the war with England, and Prussia, enraged, proclaimed war on France (September, 1806). In the battle of Jena (October 14) Prussia suffered a terrible defeat at the hands of Napoleon, who over-ran the country, although he was somewhat checked by the Russians. However, he defeated the Russians at Friedland (June 14, 1807), and the peace of Tilsit followed. Napoleon had now reached the zenith of his power.

Spanish War It is easy to be wise after the event, but there were men living who saw that Napoleon became so inflated with success that he did not know when or where to stop. Determining to reorganize the peninsula,

he placed on the throne of Spain first his brother Joseph, and then his brother-in-law Murat. But Spain rose against the invaders, and English armies, under Sir Arthur Wellesley, took part in the war. After varying fortunes, the French were driven out of Spain (1812).

Russia Whilst Wellington was crushing the French in the Peninsula, Napoleon was embarking in the scheme which hastened his ruin. Russia still held out, and he would enter Moscow as he had entered Vienna, Berlin, and Madrid. He gained the victories of Smolensk (August 17, 1812) and of Borodino (September 7), but with great losses and without inflicting a crushing defeat on the Russians. They left Moscow open as a snare, and Napoleon entered the Kremlin on the 15th of September. The next day the city was in flames. The French communications were in danger, the winter was near, the Russian forces were threatening, and that terrible retreat had to be undertaken which was the beginning of the end of Napoleon. Of 450,000 men who set out on that expedition less than 100,000 came back. Worst of all, on his return to Paris, he found the people discontented and the legislature critical.

Invasion The defeat of Napoleon at Leipsic (October 19, 1813) was one of the decisive battles in the history of the world. The allies greatly outnumbered the French, but it took them three days to beat them. As a result, there was no hindrance to the allies entering France. Austrians, Prussians, Russians poured in, to the number of 200,000, and the Emperor had but half the number. After several combats, the allies entered Paris where they were received with joy by the malcontents. A provisional government was formed, and the Emperor abdicated (April 11, 1814), offering himself a "personal sacrifice" for France.

Restoration The Bourbon régime was restored at once in the person of Louis XVIII. A new charter was promulgated, granting some constitutional rights to his subjects. It was dated as of the 19th year of his reign, as though there had been no revolution. The peerage was restored, a chamber of deputies, elected by a limited suffrage, was set up with very little power, as the King reserved to himself the initiation of all laws. The Roman Catholic religion was declared the faith of the State, but toleration was granted to dissenters. A Congress was held at Vienna for the settlement of Europe, but was interrupted by the report of Napoleon's return from Elba (March 1, 1815).

The Hundred Days The Parisians were delirious with joy when the Emperor appeared among them again; but he took no pains to conciliate them, and signs of alienation were apparent before the allied armies drew towards the frontier. The end was reached on June 18, 1815, by the decisive defeat at Waterloo. It is useless to discuss any of the many questions which have arisen respecting this tremendous conflict, so fruitful in issues. Napoleon fled, leaving Soult to conduct the retreat. He finally abdicated, and died an exile in St. Helena, in 1821, at the age of fifty-two. He was one of the wonders of the world, a man of quick perceptions, of tenacious grasp, of marvellous resource, but unprincipled, selfish, false, cruel—like Attila, a "scourge of God."

Louis XVIII It has been said of the Bourbons that they forgot nothing and learnt nothing. Yet Louis XVIII. did not rule badly, and he was not vindictive or sanguinary. Indeed, he checked the reactionary tendency of the Chamber of Deputies, and declared his intention to rule constitutionally. In September, 1824, Louis XVIII. died, entreating his brother, the Count d'Artois, to rule prudently, and in accordance with the Charter. He had done his best for France, and, if he had lived, many things would have been different.

Charles X His brother and successor, Charles X., was a man of fine manners and indifferent morals. He was disposed to go all lengths with the reactionaries. His conduct was the justification of the judgment pronounced upon the Bourbons. By degrees he put down all the liberties of the country, and the issue was the five famous ordinances of St. Cloud (July 25, 1830): (1) the suspension of the liberty of the press; (2) the dissolution of the Chamber of Deputies; (3) a new system of

elections calculated to secure absolute power to the King; (4) the convocation of a new chamber; (5) some ultra-royal appointments to the Council of State. These measures soon bore fruit, and the "Revolution of Three Days of July" was the result. At the beginning timely concessions might have averted the catastrophe. When Charles saw how things were going, he offered all that was demanded; but it was too late. The Revolutionists had the power in their hands, and offered the crown to the Duke of Orleans. Charles abdicated (August 2, 1830) in favor of his grandson, Henri, Duke of Bordeaux, son of the Duc de Berri, then a boy of ten, the same who died some years ago, as Comte de Chambord. Charles retired to England, where he died in 1836.

Louis Philippe On the day after his abdication Louis Philippe, Duke of Orleans and son of Philippe Égalité, opened the sessions of the Chambers as Lieutenant-General of the Kingdom. The charter was revised and the crown offered to him and his heirs male, with the title of "King of the French," ruling no longer by Divine right but by the will of the people, accepting the tricolor of the Revolution instead of the white flag of the Bourbons. Louis Philippe was not successful either in the management of the internal affairs of the kingdom or in his relations with foreign powers. He was a man of ability, but he seemed to have no fixed principles of action and so no faith in his own decisions; and toward the end of his reign things grew very unsettled. "Irritation, want, the feeling that the Government had done little to lessen the commercial and agricultural distress; the desire of a more popular and perhaps a more brilliant rule [than that of Guizot]; the distrust of Guizot's policy, as shown in the risks of the Spanish marriages by which he had endangered the peace of France for the sake of illusory dynastic advantages; the consciousness that the king's feelings were not friendly to the people, that his government was selfish and that he did not hesitate to use corruption and influence in elections—these things all made affairs seem unsettled and precarious." The result was the second revolution, in 1848, with a republican form of government, out of which sprang the Second Empire by the "coup d' état" of Louis Napoleon in 1852.

Napoleon III At the time of the "coup d' état" Louis Napoleon was forty-four years of age, "a man of no dignity or moral character, ambitious and unscrupulous, but somewhat wanting in nerve; far better than the adventurers who surrounded him; a man of very considerable clearness of vision, who did his utmost to develop the home prosperity of France by sweeping away the barriers which wrong-headed governments had placed on commerce, and by introducing the new doctrines, strange to French ears, of Free Trade, which he had learned to admire by seeing their application in England." The Crimean War was a scheme of his to bring about an English alliance, and is now generally condemned. It is said that the Italian war was a consequence of the Orsini conspiracy. The Franco-German war was probably intended to divert the country from thoughts of discontent with the Empire. The French made a gallant but unavailing struggle, and after the surrender of the Emperor at Metz, the Third Republic was proclaimed.

A calamitous sequel of the Franco-German war of 1870-71 was the insurrection of the Communists of Paris, which followed the collapse of the Second Empire and preceded the founding of the Third Republic. For a time the gay capital, after the German army of occupation had withdrawn, was the scene of violent outbreaks and great confusion; Paris "suffering from the so-called patriots of the Red Republicans worse outrage than it had endured at the hands of the German invaders." From March till May (1871) a determined effort was made to revive the Reign of Terror. In the latter month, after resisting a second siege, the capital was finally recovered by the Versailles army and order was at length restored.

The difference between the French Revolutions and those of England and America consists chiefly in this, that these were simply the application of principles of liberty in which the people had been educated for centuries; whilst the French Revolutions were mere insurrections against tyranny, without the people having any education in liberty. This difference may account for the different results.

WILLIAM CLARK, LL. D.

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V JUNE, 1897 NO. 3

G. MERCER ADAM, EDITOR
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ARBITRATION AND THE SENATE

The Senate, after paring down to the core of nothingness the Olney-Pauncefote Treaty of Arbitration between this country and Great Britain, has finally rejected it. In the august chamber, which we used fondly to think fittingly represented not only the dignity but the intelligence and broadmindedness of the nation, ratification has failed to secure the necessary two-thirds vote. To the members of that body it appears to have mattered little that the treaty was warmly favored by two diverse administrations, and that the people at large, with hearty unanimity, endorsed the principle of arbitration and prided themselves on the measure, as one which originated in American diplomacy and was formulated in this country. To reject it, therefore, is not consonant with the feeling of the nation in regard to the measure, nor does the vote, broadly speaking, represent the will of the people. The vote stood forty-three for ratification and twenty-six against; but as treaties, we know, require a two-thirds vote in the Senate before becoming law, and as that number was not secured, the agreement failed. Whittled down as it was by churlish antipathy to Mr. Cleveland's administration, by jingo hatred of England, and by the sinister influences of the Free Silver clique, which was hostile, because England will take no step to rehabilitate the white metal, the treaty obviously would have amounted to little as a working principle. Indeed, weeks ago, it was so regarded and discounted, both in this country and in England. Its rejection now only serves to point to the party expedients by which this great country is governed, and to the hollowness of trusting to senatorial wisdom and high-mindedness in any legislation which would manifest real statesmanship and regard for the highest interests of civilization.

Despite the action of the Senate, the sentiment of the people of this country is unquestionably in favor of arbitration as an amicable mode of settling international differences. When differences arise, conciliation, we may be sure, will not be less the spirit which actuates the two great branches of the English-speaking people. In this spirit it has now, for over three-quarters of a century, settled the disputes that have arisen between the two countries, and notably so since the era of the Civil War and the international issues affecting Great Britain which arose out of that conflict. Opposition to the treaty deprives the United States of the value which it desired to set upon its declaration as a moral force, as well as an evidence of international amity and a pledge of peace. As such, at the present moment, it would have been worth much in the eyes of Europe, now armed to the teeth; and while, towards England, there is no special or indeed any real menace in the rejection of the treaty, it is a pity that the opportunity has been lost to manifest to the Old World a hearty recognition of the principle of arbitration between the two great Anglo-Saxon nations whose common watchwords are liberty, humanity, and progress.

* * *

THE PARISIAN CHARITY BAZAAR HORROR

A much-needed lesson may on this continent be learned from the heart-rending calamity which, on the 4th ult., made desolate so many of the homes of wealth and fashion in the French capital. On that day, while the élite of the city was crowded into a temporary building, in which a charity bazaar was being held, fire in one of the gaudily decorated and inflammable booths broke out, which occasioned a panic and stampede. As usually happens, the thronged inmates of the place lost their heads, and a rush was made to the exits, which appear not to have been many, and soon an awful and saddening catastrophe occurred. Only a few succeeded in making their escape from the build-

ing by stumbling over piles of trodden humanity, and the remainder were soon enveloped, with the entire flimsy structure, in a hell-pit of flame. The whole place, we are told, burned like a match-box, and as there was no provision against fire, and a very inadequate police attendance, the loss of life was great and that chiefly of women. Among the victims were many of high rank, including duchesses, countesses, baronesses, and marquises. The total loss of life, so far as can be known, for many were burned beyond the possibility of identification, mounts up in the hundreds. Of the bodies recovered, not a few could only be recognized by the unmelted jewels embedded in the calcined flesh of the victims, and some were identified alone by the family doctor or dentist. In all there were one hundred and twelve bodies that could be recognized and claimed. Death, as usual, was no respecter of persons, for among the débris were found the charred remains of a most charitable lady, the Duchess d'Alençon, sister of the Empress of Austria, with a large number of the French nobility.

In the presence of such a tragedy, suffered to fall upon benevolent and cultured beings — it matters little whether patrician or plebeian — brought together in the sacred cause of charity, the old problem will afresh be propounded, Why Providence permits so appalling a disaster. But who shall answer the question, any more than answer could be found when thousands innocently attending the coronation festivities of the Czar last year at Moscow were trampled to death on the Hodynsky Plain; or when two thousand devout women were some years ago burned or asphyxiated in the Cathedral of Santiago; or, within our own borders, when hundreds going about their honest avocations perished last year at St. Louis in the blind sweep of a cyclone? In this imperfect world and under finite conditions, what philosophy is equal to the solution!

The lesson of the hideous tragedy, we repeat, may well be taken to heart, by those especially who, by the nature of their office, are responsible for the protection of life and property in each of our chief cities. Fearfully culpable are the heads of municipal building and fire departments, who permit structures to be erected for great political, civic, ecclesiastical or social gatherings, without the most careful provision against the accidents of panic or fire, or the perils incident to great crowds thronging unsubstantial platforms or packed in halls or opera-houses which sometimes are little better than death-traps. The casualties, often appalling, which result from negligence of this sort, are not accidents; they are crimes.

* * *

DECORATION DAY We have as a nation recently seen consigned to their final resting-place in New York the remains of General Grant, the great captain in the Civil War of the Union arms. The advancing season brings us now to the ceremonies connected with Memorial or Decoration Day, which a grateful and patriotic people love to take part in, as they commemorate the services of the loyal soldiers and sailors of the Republic who lost their lives in the tragic war of the Rebellion. The day for the gathering of the great assemblings of the people to decorate, here and there over the country, the graves of our fallen heroes, is fitly and happily chosen, since not only was it upon that day that the last soldier of the Union army in the Civil War is said to have been discharged, but it occurs at a season when the face of Nature is at its loveliest and when flowers in rich abundance can be had to offer as the tribute of honor and regard from surviving comrades and friends. Long may we thus keep green the memory of those whose valor and self-sacrifice brought the nation safely through a period of terrible conflict and trial, and, under the Supreme Disposing Power of nations and empires, helped to reunite this great Republic and its people in one indivisible and unalienated whole.

War, though in civilized times it has been the school of certain virtues — of courage, chivalry, and even, in its own despite, of humanity, as it has been said, — is still an evil; and we may congratulate ourselves that in the New World we are little menaced by it, and under no necessity, as the Old World seems to be, to maintain vast armies and to withdraw from the beneficent arts of peace a large proportion of the people in the interests of security and tranquillity. Though we are favored in this respect, we have nevertheless our burdens, for

which war is responsible; and though we have perhaps acted improvidently in adding so recklessly to the long rolls of our national pension list, we have done so in no niggard spirit, and with the dutiful desire to be generous as well as just. It is said that the last pensioner of the Civil War will not disappear for fifty years yet; but long ere then, of course, the number of the survivors will year by year diminish, and the hundred and forty millions we now expend annually will, if we have done with adding to the list, proportionably decrease. Happily there is no restiveness under the great burdens of the pension roll; while, as the years pass, each new generation shows itself only too eager to join the survivors of the war in paying homage at the shrines of the nation's gallant dead.

THE GRÆCO-TURKISH WAR

The die has been cast by the impulsive but foolhardy Greeks, and the Asiatic hordes of the Turkish army have won. This is what has occurred since the issue of our last number, and we cannot refrain from expressing regret that victory has rested not upon the banners of Freedom, but upon those of despotism. It is, of course, easy to account for the adverse issue. With the Greeks there was, in the main, no lack of courage or of willingness to fight; and though they had the better cause, nothing could well avail against superior numbers. But the Turks had not only the advantage in numbers: they were superior to their opponents in discipline, were better supplied with artillery, and were more efficiently led. The Greeks, moreover, had no leader of anything like the ability or experience of Edhem Pasha, while their soldiery were more accustomed to mountain warfare than to pitched battles on the plain.

The deficiencies of the Greeks in artillery, together with inferior numbers, many of which were without regular training or discipline, explain defeat, and even palliate the rout which is said to have occurred in the retreat of the Hellenic army from Turnavo to Larisso, and again from Larisso to Pharsala. We could have wished a better fate for the gallant little kingdom; but from her military weakness, and with the Powers from the first against her — the moral effect of which has to be allowed for — the issue is by no means surprising. Nor had Greece the luck, which we expected her to have, of gaining a victory or accomplishing great things on the sea. Her fleet, which we thought her most effective arm, has unaccountably done little or nothing. The bombardment of Salonica at the instant outbreak of the war, or a spirited dash through the Dardanelles, even if in running the gauntlet of the Turkish fortifications she had lost every ship, would have had an inspiriting effect upon her fortunes, and perhaps influenced favorably the governments, as it certainly would have influenced the peoples, of the Great Powers. But a triumph of this sort was not attempted; and all that is to her credit is the succession of encounters with the enemy on land, with some gains in Epirus, and several stubborn repulses of the Turks from positions attacked, but which had afterwards to be abandoned owing to overpowering numbers. Even with these defeats, Greece has not sought a cessation of hostilities, or shown a disposition nervelessly to ask for mediation. Intervention, in truth, has been thrust upon her, and though she has had to fall back upon her ancient frontiers, she still looks forward successfully to defend them, with the aid she will possess in Nature's grim barriers.

Turkey, on the other hand, though she has been served with a collective note from the intervening Powers, is naturally averse from complying with its demands, and shows no willingness even to accede to an armistice. Nor can we say this is surprising, when we consider the triumph of Ottoman arms, and Turkey's eagerness to repossess herself of the whole of Thessaly. If, in the collapse of Greece, the war is to end, it will only end by Turkey's insisting upon a substantial indemnity. Already the Porte has put forward extravagant claims, and but for the interposition of the Powers, Greece must be calamitously despoiled, even if her national existence is not imperilled. Here we shall hope to see the Powers effectively intervene, and by their good offices keep Turkey from extorting from Greece too humiliating terms. The negotiations will doubtless be protracted, and much diplomacy, perhaps also some coercion, will be necessary to limit the victor's demands. These include not only the possession of

Thessaly, but the handing over of the Greek fleet, besides a large money payment. It is impossible that Greece can comply with these demands, if she is to maintain her self-respect as well as her status as a nation. Turkey will do better for herself if she is modest in her claims (she can afford to be magnanimous), and is content with a small war indemnity and the other advantages in her favor. In one thing she seems likely to come out of the struggle well, and so rehabilitate, in no small measure, her dubious character. She has not only fought well — the military qualities of her troops, indeed, have been conspicuous — but she has put great restraints upon herself in her treatment of prisoners. Not only has she not butchered them, but she has, in many instances, been kind to them, and been humane to the distressed and wounded. In this change of tactics Turkey has been eminently politic: would that it implied a radical change in the national disposition and character!

In the timely task of mediation, we shall now see what the Powers will do. Hitherto the European concert has not seemed to accomplish much, if we except this, that, so far, they have not fallen out among themselves. It is true that the complications are many, and selfish interests, it is to be feared, predominate. Could we draw aside the diplomatic curtain, we should like to be assured that it is not the intention of the Powers to unduly aggrandize Turkey or to suffer Greece to be despoiled beyond hope of recovery. The Hellenic Kingdom, though a minor Power, is a European and Christian one; and in the democratization of her government we have more hope than we can possibly have in the absolutism of the Asiatic and Mohammedan Turk.

* * *

THE TRANSVAAL; ENGLAND IN SOUTH AFRICA

Uneasy rumors reach us as we go to press, to the effect that a coalition to curb England's aggression in South Africa, has been formed on the European Continent. Germany, it is said, is specially exercised in the matter, being averse to England's extension of territory in South Africa, disliking her dragooning of "Oom Paul," and probably jealous of her acquiring Delagoa Bay from Portugal, which would bring British troops within measurable approach to Pretoria. We hardly think, however, that there is justification for the diplomatic flutter, though it is true that England has just appropriated a million dollars to increase South African garrisons, and that a British naval squadron has recently been in Delagoa Bay, and is still, we believe, hovering about South African waters. It is also nevertheless a fact, that the relations of England with the Transvaal are at present somewhat strained. Since the Jameson Raid, the responsibility for which was promptly disavowed by Great Britain, there has naturally been considerable irritation among the South African Boers; while the Uitlanders, on the other hand, have bitterly resented the political disabilities they are subjected to, despite the terms of the London Convention with President Kruger and the Republic. The spirit of conciliation, we trust, however, will prevail, and we hope to see all cause of ill-feeling speedily removed. Already, indeed, there are signs of this, for it is reported that the Volksraad has repealed the immigration laws of the Transvaal, which bore adversely on English incomers, though not, it is rather offensively stated, on the ground that they constituted any breach of the provisions of the Convention.

With the combustible elements at present abroad in Europe, we cannot refrain from pointing out the gravity of the situation did events take a wrong turn. Mr. Chamberlain, the English Secretary for the Colonies, seems to be assuming a rather bellicose tone in his communications with the Transvaal, and affairs at the Cape, where there is a considerable Dutch element that in the event of war would side with the Boers, appear in consequence to be critical. England, it must be said, cannot at this juncture afford to be weak or halting in her policy, since she has now too much at stake in Africa to let Imperial interests be jeopardized. The private interests of her subjects in the gold mines of the Rand, and the ambitions of men of the stamp of Mr. Cecil Rhodes, must not be permitted, however, to assume national significance, or be suffered to influence what ought to be the inflexible policy of England, to deal justly with all states or interests, at whatever detriment to herself or her subjects.

On the other hand, if South Africa is to remain preponderatingly British, England can brook no tearing up of treaties, once they have been ratified, and no intriguing of foreign powers that would imperil her valid rights. The disposition of the Boers to abrogate the present treaty, or at least to minimize its claims upon the Republic, shows unfriendliness, and the unfriendliness, it is to be feared, is deep-seated. England has every reason, nevertheless, to be slow to pick a quarrel; and we trust that, before precipitating one, time will be allowed to intervene, so that both parties may come to a more complacent frame of mind.

THE VICTORIAN JUBILEE DEMONSTRATION

Before another number of this magazine is in the hands of our readers, Britain's Sovereign, whose remarkable reign in no little measure reflects the lustre of her own personal character, will have completed the sixtieth year of her occupation of the throne of her ancestors. The reign, as we had occasion to observe in our issue of December last, is the longest in English history, and is, we believe, the longest continuous reign in the annals of any country. But its length, we need hardly say, is not its significant feature. What the significant features of the reign are, it would take a volume to set forth. Here, however, we have no intention of even enumerating, far less dwelling upon, them. Those who need remindal of what they are may turn back in the files of SELF CULTURE to the number of which we have already made mention. To what is said there, and elsewhere in the present issue, of the notable features of the reign, we hope to make additions, in one or more papers of an interesting and instructive character, to be published in the magazine for July.

Our present purpose, beyond making this announcement, is to chronicle the coming demonstration in London, popularly termed the "Diamond Jubilee," and to outline briefly what may be expected will be its scope and character. To some extent the approaching Jubilee festival will be a repetition of that of 1887 (which commemorated Her Majesty's fiftieth year of occupancy of the throne), but with added magnificence, and with some features that will be novel to the occasion. Unlike the Jubilee of 1887, the present one will have two distinct pageants, on different days, occasioned by the anniversary of the Coronation Day falling on a Sunday. There will be the religious services of a thanksgiving character, to be held at St. Paul's on Sunday the 20th of June, followed by the national demonstration on Tuesday, the 22nd inst. The latter will be the great ceremonial function, an elaborate street pageant, in the proceedings of which all the members of the royal family will participate, together with representatives of the crowned heads of Europe, the ambassadors of the various nations, the great officers of State, the premiers of Britain's various colonies and dependencies, an unusual feature in demonstrations of the kind, besides contingents of the home army and navy, of the army of India, and detachments of the garrisons in the crown protectorates and of the militia of the different colonies. The whole will form a magnificent and memorable spectacle, as unique as is the occasion that calls it forth. The cavalcade will embrace, in addition to the representative brigades drawn from both branches of the service, detachments of colonial cavalry and mounted riflemen from Australia, New Zealand, and the Cape.

The chief interest in the brilliant spectacle will, of course, be that of the now aged but beloved sovereign, surrounded by her bodyguard of dynastic royalty and all the illustrious personages of her court, her councils, and the multitudinous services of the nation. Adding interest to the occasion will be the millions of the populace, lining the elaborately decorated streets and thronging the extemporized stagings in the route of the procession. It will be the spectacle of a lifetime, and if the illustrious lady in whose honor the demonstration is held is spared to take part in it, the function will be without a parallel in interest as well as in magnificence. The programme of the day is simple and unelaborate, the main intent being that the Queen shall be enabled to take advantage of a unique opportunity to show herself, in the capital of her vast Empire, to the largest possible number of her subjects. A brief halt will be made in front of St. Paul's Cathedral, that Her Majesty may be greeted from the steps of the historic and venerable pile with the *Te Deum*, chanted by a selected choir.

EVENTS OF THE MONTH.

Monday, April 12.—President McKinley appointed Senator Wolcott, Charles J. Paine, and ex-Vice-President Stevenson delegates to an international monetary conference....The State Assembly passed the Greater New York charter over Mayor Strong's veto by a vote of 106 to 32. ....The Greek insurgents are not supported by the regulars; their object appears to be to cut the Turkish communications between Macedonia and Epirus....Greece and Turkey have each addressed to the Powers statements of a pacific character in regard to the encounters on the Macedonian frontier.

Tuesday, April 13.—The London papers continue to comment on the reopening of the seal question by the United States as a blow at arbitration....The Mississippi River at Vicksburg reached 51.3 feet, the highest ever recorded.... The Porte has addressed a note to the Powers, stating that indemnity will be asked for Turkey's great expenses caused by the attitude of the Greeks on the frontier....It is said that it is doubtful if Lord Salisbury's health will permit him to retain the post of premier and secretary of state for foreign affairs.

Wednesday, April 14.—The bureau of statistics reports that during March the exports of domestic merchandise amounted to $85,409,425, a gain of over $11,000,000 as compared with March, 1896 ...The levee around Davis Island, or Davis Bend, in Mississippi, opposite Ashwood, Louisiana, gave way, and 13,000 acres of land were submerged....On the reassembling of the "Boule" in Athens, M. Delyannis, the premier, introduced a bill granting the government a credit of 23,000,000 drachmas for the ministries of war and marine.

Thursday, April 15.—The senate committee on Civil Service decided to enter upon a thorough investigation of the extent to which the Civil Service law is enforced....A revolution has broken out in the Central American Republic of Honduras and martial law has been declared.

Friday, April 16.—Another expert seal commission will be appointed to act in conjunction with one already selected by Great Britain to visit Bering Sea and continue the study of conditions surrounding seal life....Carter H. Harrison was inaugurated as mayor of Chicago.... The Greek irregulars were driven from Krania by the Turks after some severe fighting.... Seven British warships have arrived at Durban, Natal, and two more are expected; the object of this naval demonstration is not known.

Saturday, April 17.—The Dingley tariff bill is to be submitted to a caucus of Republican senators in order to insure party harmony....Much water is spreading over Madison Parish, La., from a break in the Mississippi levee nearly opposite Vicksburg....The Turkish council of ministers at Constantinople declared that a state of war existed on the Greco-Turkish frontier, and ordered Edhem Pasha to take the offensive; fighting on the border between regular troops of the hostile armies continues.

Sunday, April 18.—Senator Butler, as chairman of the Populist national committee, having refused to call a national convention of the party on the demand of the middle-of-the-road faction, the latter have issued a call for a meeting in Nashville on July 4....M. Delyannis, the Greek premier, announced to the Boule that diplomatic relations with Turkey had been severed. He said that Greece accepted the Turkish declaration of war; fighting by land and sea between the Greeks and Turks goes on.

Monday, April 19.—The Administration decided to strengthen Admiral Selfridge's squadron in the Mediterranean, in consequence of the war between Turkey and Greece....There was another break in the levee twenty miles below Natchez, Miss....It is reported that the Powers are considering the expediency of ordering the international fleets to leave Cretan waters and go in the direction of Salonica and the Dardenelles, to watch the fighting with a view to localizing it, if necessary, by naval intervention ....The Turks have been defeated at Reveni, and two Greek brigades have entered Turkish territory in different directions, and penetrated to Damasi, northeast of Zarkos.

Tuesday, April 20.—President McKinley sent a long list of nominations to the Senate, among them, Cornelius Van Cott, to be postmaster of New York City....Ninety-three fourth-class postmasters were appointed....The water that is pouring through the crevasses of the Mississippi River levees continues to spread over Louisiana plantations....The Greek forces met with minor successes in Epirus....The Parnellite convention was held in Dublin; a resolution was adopted providing for the formation of an independent Irish league in which agrarian interests are not to be dominant.

Wednesday, April 21.—Republican members of the Senate Finance Committee have notified the Democrats that the retroactive clause of the tariff bill will be stricken out, either in committee or in conference....The 18-foot levee at Shipland Landing, Miss., gave way, and Issaquena, Sharkey, and Yazoo counties, where there was a foot of back water before, will be still further inundated....The International Y. M. C. A. convention began at Mobile, Ala....The first seriously-planned battle betwen the Turks and Greeks began north of Larissa; the Greeks were greatly outnumbered, but they fought desperately....Col. John Hay, the new United States Ambassador to Great Britain, was welcomed by the Mayor of Southampton....Emperor William of Germany arrived in Vienna and was cordially welcomed by the Emperor of Austria.

Thursday, April 22.—A memorial was presented to the President and members of the cabinet by the executive council of the federation of labor urging legislation in the interests of the workingmen....Harold M. Sewall, of Maine, has been appointed envoy extraordinary and minister plenipotentiary to Hawaii....Fighting is going on almost daily in the vicinity of Candia, where there are 5,000 insurgents.

Friday, April 23.—President McKinley has appointed William R. Day, of Canton, Ohio, first assistant secretary of state and ex-Representative Bellamy Storer, of Cincinnati, minister to Belgium....No. 2 red winter wheat" sold in St. Louis at $1.03 per bushel, the highest

price reached since 1890....By the capture of Katrina, on the Gulf of Salonica, the Greek squadron secured immense stores of provisions destined for the Turkish armies....Osman Pasha, the hero of Plevna, has been appointed commander-in-chief of the Turkish army. (Edham Pasha was subsequently reinstated).... The Sultan's troops have taken and occupied Tyrnavo.

Saturday, April 24.—The President granted permission to General Miles to visit the scene of war between Greece and Turkey... Wu Ting Fang, the new Chinese minister to the United States, Spain, and Peru, arrived in Washington. ....The secretary of the treasury received a telegram from Assistant-Treasurer Jordan at New York stating that $977,000 in gold bullion had been ordered for export.....The Greek army in Thessaly, after a pitched battle with the Turks at Mati, near Milouna Pass, evacuated Tyrnavo and Larissa, and fell back to Pharsalos, twenty miles south of Larissa....The Shah of Persia is reported to be dangerously ill....Germany is trying to persuade France, and through her Russia, to support Germany in resisting Great Britain's imperious attitude towards the Boers in the Transvaal, in exchange for Germany's support of France in the Egyptian question.

Sunday, April 25.—The third annual convention of the Theosophical Society in America was held in New York City....The Powers are moving to intervene between Turkey and Greece, and it is thought the end of the war is in sight. ....It is reported that a rising has occurred in the interior of Epirus....Emperor Francis Joseph left Vienna for St. Petersburg....A daughter was born to the Duchess of York.

Monday, April 26.—The Democratic members of the Senate finance committee will insist that the tariff bill be considered by the full committee before it is presented to the Senate....It became positively known that the Greek retreat from Larissa was a complete rout, due to temporary cowardice.... Twenty-five thousand insurgents in the Philippine Islands, who have not submitted to the Spaniards, have taken up a position in the mountains.

Tuesday, April 27.—The Grant mausoleum in New York was dedicated with elaborate ceremonies and formally turned over to the city. ....Ex-Minister Thurston presented to the Senate finance committee a long list of reasons why the treaty of reciprocity with Hawaii should not be abrogated....Additional breaks in the Mississippi River levees have occurred....A revolutionary spirit is manifesting itself among the Greeks in Athens.

Wednesday, April 28.—The town of Guthrie, Oklahoma, was flooded by unprecedently heavy rains; the flood carried everything before it, many persons being drowned in their houses or swept away in the torrent. The lives lost numbered about fifty....The Greeks repulsed the Turkish advance at Velestino, eight miles from Volo; the Turkish forces defeated the Greeks at Losfakia, the Greek loss is given at four hundred killed and many wounded....The International Art exhibition in Vienna was opened; there are a number of American exhibitors.

Thursday, April 29.—The President and Mrs. McKinley returned from New York to Washington....The President has given his formal assent to the projected trip of General Miles to Greece and Turkey....Under the plan of reorganization of the senate committees silver Republicans will hold the balance of power in fourteen and Populists in eleven States....The king of Greece asked for the resignation of M. Delyannis, the premier, and intrusted the formation of a new cabinet to the opposition; a new cabinet was formed, with M. Demetrius Ralli as premier....The Queen Regent of Spain signed a decree providing for the application of the agreed-upon reforms for Cuba, Captain-General Weyler having announced that the western part of the island is completely pacified.

Friday, April 30.—The United States Supreme Court sustained the right of the Government to collect duty on imported merchandise withdrawn from consumption at the rates fixed by a tariff act which had been repealed....The Society of the Sons of the American Revolution, at Cleveland, elected Edwin S. Barrett, of Massachusetts, President-General .... The commander of the foreign vessels in Cretan waters has been ordered to consider Colonel Vassos, who commands the Greek army of occupation in Crete, as a belligerent, and to no longer oppose Greek attacks on the Turkish troops there ....It is stated that the Turkish cavalry has occupied Volo....Four wagon-loads of dynamite exploded in the city of San Salvador, Central America, killing many persons and destroying two blocks of houses....Earthquakes in the Leeward Islands have caused great loss of life.

Saturday, May 1.—The Tennessee Centennial Exposition in Nashville was opened, President McKinley setting the machinery in motion from the White House....The senate committee which is investigating the workings of the Civil Service Law held another session in Washington ....The new Chinese minister to this country was received by the President....Informal proposals for an armistice have been made to the Powers by Greece; Greek reverses continue at Epirus....The Bering Sea fisheries dispute was presented afresh in London, giving both the Canadian and American views.

Sunday, May 2.—Trinity Church, New York, celebrated the 200th anniversary of its foundation....Secretary Long and Postmaster-General Gary, in communications to the Senate committee, expressed the opinion that the Civil Service System should be retained, but that it should be modified....A member of King George's personal staff telegraphed to London that the Greek army had been compelled to retreat and that all hope of continuing the war with Turkey is virtually abandoned....The unsanitary conditions in some of the Cuban towns and cities are appalling, and disease and hunger go hand in hand....The Spanish forces in Cuba have captured the port of Banes.

Monday, May 3.—The Women's Building at the Nashville Exposition was opened....A fire in Pittsburg caused a loss of $3,000,000....Albert G. Porter, ex-Governor of Indiana, and ex-Minister to Italy, died in Indianapolis.... There were reports that Edhem Pasha had requested an armistice for three days; in the

fighting at Velestino the Greeks held their positions, and M. Ralli claims a decisive victory; talk about intervention by the Powers continues; panic prevails in Arta....Colonel John Hay, the American ambassador, presented his credentials to Queen Victoria at Windsor Castle ....Germany's interests, as affected by the Dingley bill, were discussed in the Reichstag.... Colonel Vassos has been relieved of the command of the Greek forces in Crete.

Tuesday, May 4.—The president nominated Webster Davis, of Missouri, to be assistant secretary of the interior....The Atlantic and Pacific railway has been sold to a director of the Atchison, Topeka and Santa Fé railway for $12,000,000....Over a hundred persons, many of them titled women, lost their lives, and many more were injured, at a charity bazaar in Paris... The intervention of the Powers has been tendered to Greece....The revolution in Ecuador is reported to be gaining strength.

Wednesday, May 5.—General Miles, of the United States army, sailed from New York on his way to the seat of war between Turkey and Greece to observe the military operations of the contending armies....Governor Black signed the Greater New York charter....The Universal postal congress was formally organized in Washington, fifty-five countries being represented... It is estimated that the loss of the Greeks in the fighting at Velestino and Pharsala was 1,000 killed and wounded, while the Turks lost 3,000....Uruguayan rebels defeated a body of government troops under General Escobar.

Thursday, May 6.—The secretary of the navy has finally accepted the cruiser *Brooklyn* upon the favorable report of the board which conducted her recent sea trial....Representative King, of Utah, has introduced in the house a resolution providing for the annexation of Hawaii....After a battle lasting fifteen hours the Greeks retreated from Pharsala to Domokos, thirteen miles south of Pharsala; the Turks have taken possession of Pharsala; the Greeks had about 20,000 men, and against them were 50,000 Turks....The news of the evacuation of Pharsala caused despair at the Greek capital, and the irritation is finding vent against the powers for non-interference....The Transvaal volksraad repealed the immigration law, not because it was a breach of the London convention, but because it was distasteful to neighboring states.

Friday, May 7.—The special ambassador of the United States will enter into negotiations with Russia and Japan for the protection of fur seals, Great Britain having refused to enter into any agreement ...After a second engagement at Velestino the Greek forces retreated and the Turks have entered Volo....The Duc d'Aumale died at Zucco, Sicily, of apoplexy, on hearing of the death of his niece, the Duchess d'Alencon, who was burned to death in the Paris fire....The American society in London gave a farewell dinner to Mr. Bayard, the retiring ambassador.

Saturday, May 8.—Republican members of the senate finance committee issued a statement comparing rates of duty in the revised tariff bill with those under previous laws....The Greek forces will be withdrawn from Crete, and after a brief delay it is expected that the powers will intervene....Requiem mass for the victims of the charity bazaar fire in Paris was celebrated with great solemnity in Notre Dame cathedral; services were also held in the chapel of the French embassy in London.

Sunday, May 9.—The navy department has ordered the *Marblehead* to Puerto Cortez, Honduras, to protect the interests of Americans.... The attendance at the Tennessee exposition for the first eight days has been 73,500 persons.... The members of the bimetallic commission have sailed for Europe....It is reported that Greece has applied for the mediation of the Powers.... The Queen Regent of Spain has authorized a loan of £8,000,000 to meet the cost of military operations in Cuba and the Philippine islands.

Monday, May 10.—President Jordon, of Leland Stanford university, has been appointed commissioner to investigate the condition of the Bering Sea seal herd the present season....Corea has joined the Universal postal union....The Brussels exposition was formally opened.... Turkey demands as the price of peace an indemnity of $15,000,000, a rearrangement of the Greek frontier, cession of the Greek fleet to Turkey, and a satisfactory settlement of the Cretan question.

Tuesday, May 11.—Senator Hale spoke against the Morgan Cuban resolution, holding that its manifest purpose was to hinder Spain from making a loan... Germany insists that Greece shall accept complete autonomy for Crete and obey the counsels of the Powers as a condition to intervention....An unknown donor has contributed a million francs to the fund for the victims of the Paris Charity Bazaar.

Wednesday, May 12.—The Cuban resolution was debated in the Senate. Senator Lodge stated that there are recent advices in the State Department that will furnish a basis for action....Emperor William, of Germany, has donated $2,000 to the funds of the Paris Bazaar. ....The Queen's drawing room held at Buckingham Palace, London, to-day was an imposing function....The revolution in Honduras is ended.

Thursday, May 13.—Senator Aldrich expressed confidence in the acceptance of the Tariff bill when it reaches the Senate....The ambassadors of the Powers have asked Turkey to suspend hostilities in Greece pending the conclusion of a stable peace; Turkey's reply is now awaited....New gold mines have been discovered in Peru....The Transvaal Government, in its answer to the English Secretary for the Colonies, practically defies Great Britain.

Friday, May 14.—President McKinley unveils to-morrow, at Fairmount Park, Philadelphia, the monument to Washington erected by the Society of the Cincinnati....The President will send to Congress on Monday a message, to accompany a portion of the Cuban correspondence....The Greeks have renewed the fighting in Epirus....Premier Ralli says that Greece will wage war until an armistice is arranged.... The bulk of the Hellenic army has now fallen back on Lamia, where it will be in closer communication with General Smolenski....The Greek troops have begun to leave Crete....It is stated that a strong feeling exists in the Bulgarian army and among the Bulgarian people against Turkey.

INQUIRIES ANSWERED

Will you kindly say which European nation — France or Germany — is best equipped as a war power? France, I am told, can put herself on the largest war-footing. Is this correct? Also, is not the United States navy inferior in number to the combined fleets of Greece and Turkey?

A special interest centers at present in the military resources of Europe. Russia, it may be said, has the largest population capable of bearing arms; Germany and Great Britain come next; France and Austria next; then Italy and Spain. Financially, Great Britain could best bear the strain of a period of European war, while her naval strength far exceeds that of any other power, and, we might almost say, exceeds that of any two powers, in the world.

The number of men in the army maintained by France, on a peace footing, is about the same as that of Germany. France has a total of 598,263, or an effective strength of 553,747. The peace strength of the German imperial army in 1895-96 was 584,734 officers and men, though the law of August 3, 1893, only sanctions a strength of 479,229 men, besides officers, surgeons, paymasters, etc.

France has, however, very greatly the advantage on the sea, her navy standing next in importance to that of Britain. Germany, on the other hand, could, in the case of war, put a larger force in the field than France. On a war footing, Germany could, it is calculated, put three million trained men in the field, France an available force of two and a half million.

The total peace footing of Russia was in 1892 868,000 officers and men. This includes her army in Asia as well as in Europe. The estimated war footing (1894), according to the new organization, gives Russia a total of 2,532,496 combatants. Russia has also a considerable navy, which she is at present actively increasing, as she is increasing, on a large scale, her coast defenses.

Turkey's present naval strength is exceedingly poor, and all but useless as a fighting force. A good authority says that "three ships only can now be counted on as seagoing armor-clads of fighting value. The rest are all of such small displacement (the latest of these dating from 1875), or were built so long ago (1864-65) as to belong now to the classes of convoying cruisers and local defense vessels.

Greece makes a better showing, her navy consisting of five armor-clad vessels (three first-class cruisers and two port-defense armor-clads). She has also three third-class cruisers *a* and fourteen *b*; and, of torpedo craft, six first-class and eleven third-class, with a few unprotected vessels. In the present war with Turkey, Greece has, curiously enough, done little with her fleet.

You are very far wrong in supposing that the United States navy is inferior in number to the combined fleets of Turkey and Greece. It is not only more numerous, but vastly more efficient in fighting power, though that, happily, has not as yet been submitted to a practical war test. The vessels in commission include battleships, heavily armored, of the "Indiana," "Maine" and "Texas" type, double and single turret monitors, chiefly designed for harbor defense, cruisers of the "New York" and "Brooklyn" type, built primarily for speed, and carrying a comparatively light battery. In addition to these are the unarmored vessels of the "Boston," "Bancroft" and "Chicago" type, many of which have a formidable battery. Finally, there are the torpedo cruisers, or gunboats, the scouts of a fleet, with a group of wooden vessels of old design. Here is a proximate list of the present strength of the navy: Battleships 8; monitors 6; armored cruisers 2; ram 1; single-turret monitors 13; unarmored vessels of the "Baltimore," "Chicago" and "San Francisco" type 39; torpedo boats 10; besides gun-bearing steamers of the "Mohican" type, and sailing vessels of the "Constellation" type.

Please explain through your instructive magazine upon what principle life insurance companies conduct their business and how they make their profits?

The business of large insurance companies is based on tables, prepared by actuaries, which determine the death-rate on an average, say, of one hundred thousand people, or, more specifically, that show what proportion of the inhabitants of a given country of the age, say, of 20, 40, or 60 years, live on beyond these several years. When this is found, as it has been found in all civilized countries, it is then easy to calculate what premium shall be paid annually by an applicant for life insurance of a certain age, so as to cover the risk, pay the expenses of maintaining the office and its army of agents, and a profit to the stockholders of the company beyond the usual current interest.

A somewhat similar process governs the business operations of a fire insurance company. A reference to this will help to make the method plain. For instance, it is said that in Great

Britain, insured property to the value of $150,000 is burned every day in the United Kingdom. This being known, what has then to be determined is, how much premium shall be asked to insure property that will meet this proportion of average loss, with attendant expenses, and yield an average profit.

I am anxious to have some points on the following subject: Resolved, "That the historic significance of Gladstone is more weighty than that of Bismarck." (Can you suggest a better wording of the resolution?) Will you kindly let me hear from you, or indicate where I can procure suggestions for the discussion?

We prefer the form: "Which is the greater historic character — Gladstone or Bismarck?" to that cited by you: "Resolved," etc. The subject of the debate, you will find, has already been discussed in the pages of SELF CULTURE. Pray refer to the issue for December, 1895, page 618, No. 3, Vol. ii. There a comparison is made between the two men. We would also refer you to an article on Gladstone, in the number for January last. Also, see the articles on Prince Bismarck in the issues for January and March, 1896.

Bismarck, we need hardly say, is a man of action; Gladstone is more of an orator, a man-of-letters and a statesman. Bismarck has been identified with the creation of an Empire and a distinctive nationality; Gladstone with the primacy of a party (the Liberal) in the nation, and more or less engrossed with partisan politics.

In foreign affairs, Gladstone, like most Liberals, has been timid and unaggressive — unlike in this respect Prince Bismarck, who has been the redoubtable exponent of Imperialism in Germany and of the patriotic national idea.

Where Gladstone has the advantage of Bismarck is in the sphere of sentimental ethics and morality. His fervor of manner, enthusiasm, and oratorical force, coupled with his phenomenal powers of parliamentary and literary expression, will place him, with English-speaking people, at least, in a more enduring niche than the iron-willed German ex-Chancellor.

Pray refer to the articles mentioned, and to the points for debate in the issues named.

Please give me some points on the negative side of the debate, "Resolved: That the United States should increase and maintain a larger navy."

1. The need of the United States to maintain a larger navy is not apparent, while it tends to nullify the advantage which is always claimed for the American Republic, that it has no military or naval burdens, or other expenses incidental to monarchy.

2. That the policy of the American people and their government is opposed to territorial expansion, to aggression on the north or south of the United States, or upon neighboring islands, either in the Atlantic or Pacific.

3. That all that this country needs to uphold its dignity or its honor is sufficient naval strength to give protection to its subjects abroad, and to enable it to back any demands upon foreign powers for redress when insults have been paid to it or losses have occurred to its subjects.

4. That the present naval strength of the nation is ample for legitimate purposes, and any increase in it is apt to encourage objectionable and impolitic displays of jingoism, if not wanton aggression.

5. That this country is, unlike the nations of Europe, not menaced by neighboring powers whose attitude towards each other, if not that of hostility, is that of armed readiness for war on any slight provocation; that it is not called upon to waste its people's substance on extensive armaments, great fleets, or immense armies; and that its immunity from such burdens is at once a relief to the producing as well as expending resources of the nation, and a happy contrast to the condition of European countries.

Will you be good enough to suggest some subject suitable for a young lady to write a graduating thesis upon?

It is difficult — not knowing the young lady's tastes or the subjects to which she has given attention — to suggest a theme for a graduating thesis. Usually we have found that subjects which call for abstract reasoning have been found difficult of handling by young minds, and therefore we commend a paper on some concrete subject — a study of some character in history, about which one can read in any cyclopædia and which would interest the feminine mind. Try a character like Mary, Queen of Scots, Queen Elizabeth, Charlotte Corday, Empress Josephine, Catherine II. of Russia, Florence Nightingale, Clara Barton, etc., or a sketch of some of the women novelists, such as Jane Austen, Currer Bell (Charlotte Brontë), or George Eliot.

If the young lady is drawn to literature generally, a paper on some of the English or American poets, such as Cowper, Wordsworth, Tennyson, or Bryant, Lowell or Longfellow, would probably interest and prove attractive. Or a paper on the delights of reading, on the choice of books, on the opportunities of women at the present day, on modern art or on exhibitions of pictures which one may have seen, on the

benefits of physical education for women, or a paper on any particular literary or artistic era.

If from these subjects you can make selection of a topic, we can, if you desire it, suggest points which might be brought out in the preparation of the essay.

In Tennyson's "Dream of Fair Women," who are the different women described? Please inform me and explain the allusions in each instance.

The female characters alluded to in Tennyson's "Dream of Fair Women" are as follows: Line 7, Elizabeth is the Tudor Queen. Line 47, The lady here does not seem to be any historical character. Line 87, "The daughter of the Gods" — Helena, wife of Menelaus, the abduction of whom, by Paris, son of Priam, occasioned the Trojan War. The reference in line 95 is to the calamity which befell the Spartans, in rushing into war. Line 100, "One that stood beside," refers to Iphigenia, daughter of Agamemnon. The reference to this character in line 115 is rather at variance with the account given in classical dictionaries of her fate. When she was about to be sacrificed, Diana (Artemis), substituted a hind for her and carried her off in a cloud to the land of the Tauri (the modern Crimea). Ll. 104–117, "This woman was the cause" — Helena. L. 127, "The Queen with swarthy cheeks, etc."— Cleopatra. The poet here takes Cleopatra for an Egyptian, rather than, as she was in fact, a Greek, the daughter of Ptolemy XI. (Auletes), who was of Greek descent. 139, The reference here is to Octavius Cæsar, whose love Cleopatra tried to gain after the death of Mark Antony. 197, The daughter of the warrior Gileadite—Jephtha's daughter. 251, Rosamond—mistress of Henry II. of England, poisoned by Henry's wife, Eleanor. Referred to in line 255. 259, Fulvia, the wife of Mark Antony prior to his marriage with Octavia. The poet here uses Fulvia by metonymy for Queen Eleanor. Rosamond's relations with Eleanor's husband were as those of Cleopatra with Fulvia's husband. 266–267, Margaret Roper, the daughter of Sir Thomas More. After her father's death Margaret retained his head, and when she herself died it was buried in her arms. 269–271, Queen Eleanor, the wife of Edward I. of England, who accompanied her husband to the Holy Land in one of the crusades. After her husband had been wounded with a poisoned weapon, the Queen sucked the poison from the wound.

Kindly inform me through SELF CULTURE when the dollar mark ($) was first used and what is its origin.

The question is well-nigh impossible to answer and proves most elusive to research. All we know is that the dollar mark came into use early in the national history, but authorities differ widely as to its origin. One says that it is derived from the monogram U. S.; another that the $ was originally a figure 8 and referred to the Spanish "piece of eight." The latter would seem the more likely explanation of its origin and adoption by this country. Still another authority suggests as a probable origin, the combination of the letters P. and S., from the Spanish *peso duro*, signifying "hard dollar." In Spanish accounts *peso* is contracted by writing the S. over the P., and placing it after the sum.

You will confer a favor by giving me answers to the following questions: Who were the first miners and who the first metal-workers? How did they discover the uses to which certain things might be put? Who produced the first alloys, and under what conditions?

The earliest miners and metal-workers of whom we have record were the Aryan peoples of Euro-Asian origin, who, though of pastoral and arboreal habits, were familiar with the metals and worked with them — at least with the metals, gold, silver, and bronze. Chaldeans and Assyrians, as we now know from the cuneiform inscriptions which go back 3000 years B. C., were undoubtedly expert in the use of metals; while the Egyptians had an intimate knowledge of the arts and sciences. In the brick and other inscriptions, recently discovered, artisans are seen at work with curious details of their methods and tools. Potters, indeed, had attained eminence in their art, and the Egyptians had certainly a knowledge of chemistry, as the samples of their glass-blowing and the stone pictures of tools, forceps, blowpipe, etc., prove. Gold was largely used at an early period — between 4,000 and 5,000 years B. C., as we find from some newly-discovered and ingenious weighing balances. Many centuries older than the Pyramids, which date from sixty to fifty centuries back, we have examples of engineering in Memphis, which could not have been constructed without tools, and necessarily an acquaintance with metals. The word "metals" is of Semitic origin — the Hebrew word "matal," to forge, indicates an early acquaintance with the fusing of ores and the malleability of metals.

How these early primitive people discovered the uses of things must, of course, have been through their wants and needs, particularly after they left pastoral and tent life and began to build cities. The Arabs are credited with being early acquainted with the alloys, though alchemy, as a science, dates only from the 16th

century. See the article Alchemy in E. B., Vol. 1, page 459; also Anderson's "The Story of Extinct Civilizations of the East" (Price 50 cts.), D. Appleton & Co., Publishers, New York.

Will you kindly explain the different styles of Architecture common to this country from the Colonial era downwards? Please indicate the chief characteristics of Domestic, Ecclesiastical, and Civic Architecture.

The history of architecture in the United States may be said to be an echo of that of Western Europe. In the early days of the New England Colonies educated architects were unknown, and the early structures were built according to the remembered tradition of their builders, modified by circumstances and materials. The churches, town halls, and domestic dwellings of the Colonial period of architecture have an antiquarian, rather than an architectural, interest. Another fact must be remembered in speaking of American architecture, viz., that construction, especially at this era, partook largely of the various styles then prevalent in the European States from which settlers came to America. In New York buildings took on more or less of the Dutch characteristics. French taste prevailed in the French districts, and in Spanish Colonies the architecture bore the stamp of Spain. English influence conquered, though the architecture of the Colonial period generally became a reflex of the country which furnished a majority of the citizens. Independence Hall is a relic of the Colonial days. In style it resembles the buildings of England of the same epoch — that is to say, it gives evidence of an utter decay of the classic style, as yet unwarmed by the touch of any coming revival. Christ Church of Philadelphia is a favorite specimen of a Colonial church, the principal feature of which is the steeple built in three stages.

There are also numerous dwelling houses of the old Colonial days to be found throughout the Eastern States, substantial, business-like structures whose exteriors are strictly symmetrical, plain and square, with an entrance in the center and rectangular windows on each side. But the interiors had stately centre halls and staircases, and rich ornamentation, marked by delicacy and refinement. The plan of the Colonial dwelling house of the better class was extremely simple, consisting in the main of a hall, ten or twelve feet wide, with an ample staircase in the centre, and two square rooms opening on each side of the hall. The staircase was the most elaborate part of the house, and the hall, as well as the principal rooms, was panelled to a moderate height. Sometimes the parlor was wainscotted to the ceiling, but more often the chimney piece only was panelled to the ceiling. The entrance had usually a pilaster on each side, with an entablature (executed in wood) and pediment above, projecting eaves, and a low-pitched gambrel roof, and chimneys of brick. This was after the first part of the 18th century. At an earlier period, in the 17th century, the dwellings nearly always had the chimneys and gable ends constructed of stone, while the sides and ends, above the line of the roof-plate, were framed of heavy oak logs, squared with an axe, and covered with stucco and split shingles.

In the ecclesiastical construction of the Colonial period, whatever of ornament there was, was lavished on the steeple. In church architecture, more than in any other department, is seen the effect of the influences of the mother-countries in the style of building.

The architecture of the period immediately succeeding the War of Independence was marked by a return toward Classicism, though it was not until the second decade of the century that the rage for Greek set in. This rage for Grecian imitations conflicted, and became badly mingled with, the "American Vernacular" style, which for many decades had been the accepted style for American dwellings.

It can hardly be said of American architecture that it has had any distinct style or national peculiarity, apart from the Colonial. Indeed, it would be almost impossible for the United States to develop any distinctive style apart from contemporaneous styles on the European continent. Architects in this country, like artists, have hitherto been too much given to looking backward and toward Europe for perfection, and their originality is checked, both by constant intercourse with the parent country and by the constant influx of European ideas.

Notwithstanding this, there are many distinctive tendencies in building that can be called American. Thus, the modern apartment house, the American hotel, stores and office buildings, deviate widely in arrangement from European public buildings. We cannot do anything like justice to so large a subject in this short sketch. See "Studies in American Architecture," by Montgomery Schuyler, published by Harper Bros., New York, 1892.

Be kind enough to give me your opinion as to the success of acquiring a knowledge of German from a text-book merely, or would you advise going abroad to pick up the language?

While many with a special gift for acquiring languages have been able to pick up a language

like German without an instructor, we honestly think that it cannot well be done, unless at a needless loss of time and effort. No text-book, for instance, can be the equivalent of the educated human voice in the matter of pronunciation of a foreign tongue. Where practicable, the best of all courses is to proceed to the country where the language is spoken, and there acquire a knowledge of it practically and at first hand. With a good text-book and access to an educated German with whom you can read for an hour twice or thrice a week, you may be able to do much, however, especially in making your way through a German classic and enabling you to read the literature of the language. But to speak it correctly and fluently, you should be a good deal in the society of Germans so as to catch the niceties in the structure and spoken forms of the language, and acquire that flexibility in the use of the tongue which you will wish to possess. The text-books we would recommend are: Cook's "Otto's German Grammar." (Price $1.30.) Henry Holt & Co., publishers, New York. Heath's German-English and English-German Dictionary. (Price $1.50.) D. C. Heath & Co., publishers, Boston, New York and Chicago.

In a forthcoming issue of SELF CULTURE we hope to deal at some length with this subject of acquiring foreign languages, from the point of view of the business man and his commercial or manufacturing interests abroad.

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(1) I have been asked often why it is that dealers and manufacturers of nails, both cut and wire, speak of them as the "4 penny" or the "8 penny" or the "10 penny" and the "20 penny" nails. Please answer this in SELF CULTURE. You will see that I am a member of the League. (2) Also, please let me know why it is that at "Easter time" people make use of the egg in some symbolic way; why not use seeds or nuts?

(1) Nails are said to be 4–6–8 or 10 pound nails, according as 1000 of the variety in question weigh four, six, eight or ten pounds. The word "penny" is a corruption of "pound," the old phrase being pronounced ten-pun' nails for ten-pound nails, that is, ten pounds go to the 1000.

(2) Why we use eggs, rather than seeds or nuts, at Easter, is owing to the belief that the Pasch or Pace egg is symbolical of creation, or the re-creation of Spring. The origin of the practice is Persian or Magian, and prevailed among the Jews. Christians adopted the custom to symbolize the Resurrection. Popularly, there was an early tradition that the world was "hatched" or created at Easter-tide.

I write to know the meaning of the Irish expression "Erin go Bragh," and naturally seek enlightenment in your interesting and instructive pages.

The phrase "Erin go Bragh," which means "Erin (or Ireland) forever," was the ancient war-cry of the Irish. Most of the Celtic clansmen had a tribal slogan or battle-cry which was used in the ranks to keep the fighting men aware of the place of their own clan when about to make an onset, or to aid in recalling them when scattered in the woods and hills. The O'Neills, for instance, had a cry equivalent to "Red Hand," the badge of the family or clan. The O'Briens cry was "Laudir aboo!"—or "Strong Hand aboo," or lively. The Kildare retainers call was "Crom aboo"—suggesting Crom Castle, a stronghold of the O'Donovans, and so on.

Please let me know where to obtain "Hints for the Founding of Women's Clubs for Reading and Debate." Also, kindly tell me all about American women in England and what they have accomplished.

1. Women's Clubs are now very general throughout the country, and are contributing largely to the intellectual life, while giving the sex something to be interested in besides social frivolities and dissipations. Appended to a work which you ought to procure, if you do not already know it, are "Hints for Women's Clubs," together with an outline constitution and by-laws. If you desire a list of books suitable for Women's Clubs, you will find this in the publication referred to, viz., "List of Books for Girls and Women and their Clubs," edited by A. H. Leypolt and George Iles (Price 50 cents) issued by the Library Bureau of the American Library Association, at New York (280 Broadway), Chicago (215 Madison St.), and at St. Louis (Security Bldg.). The writer of this contributed to the volume the article on Literature: Poetry, Essays and Criticism, with a list of the approved works in these departments.

2. Your second question is vague, "all about American women in England and what they have accomplished." What can be said in reply is the most general observation that American women in England have mainly been known in society, to which they have had ready entrée, especially if possessed of wealth, and they have been in demand as wives by Englishmen of title or high social position. In other respects, American women of the literary class

have made themselves known by their achievements, and there such women as the following have made names for themselves: Mary E. Wilkins, Margaret Deland, the late Mrs. Stowe, Louisa Alcott, Susan Werner (Elizabeth Wetherell), Mrs. Gertrude Atherton, Mrs. F. Hodgson Burnett, Mrs. Sara Jeannette Duncan Cotes (a Canadian), Mrs. Burton Harrison, Mrs. Helen Jackson Hunt ("H. H."), Blanche Willis Howard, Mary N. Murfree (Chas. Egbert Craddock), Amélie Rives Chanler, Elizabeth Stuart Phelps, Constance Fenimore Woolson, Sarah Orne Jewett, and Kate Douglas Wiggin.

Pray give me some hints to enable me to become a public speaker, also state what manuals are worthy of study on the subject.

To become a public speaker, it is necessary that you should not only have something to say, but should be a well-informed and broadly cultivated man, with large mental resources, a magnetic manner, and considerable confidence in one's self. To become proficient in the art you should be acquainted with the rules of rhetoric, and have read widely the speeches and addresses of great orators, ancient and modern. Besides the article on Rhetoric in Vol. XX. of the "Encyclopædia Britannica," you should consult Sear's "History of Oratory" (Price $1.50), Chicago, S. C. Griggs & Co; Johnston's "American Orations," 3 vols. (Price $3.75), G. P. Putnam's Sons, N. Y.; Adams' "Representative British Orators," 3 vols., $3.75, same publishers; Raymond's "Orator's Manual" ($1.50), Chicago, 1879. You might possess yourself also of a little manual (Price 25 cents), entitled "How to Speak in Public," or the "Art of Extemporary Oratory," and "Rowton's Debator" (Price 50 cents). The two latter works are published by Dick & Fitzgerald, 18 Ann St., N. Y.

I desire some arguments on the *negative* side of the question, "Resolved: That the Island of Crete should belong to Greece." What is the design of the Great Powers in giving autonomy to Crete?

You would have to uphold the unpopular side in the debate did the resolution call for judgment on the question whether or not Crete should free herself from Turkish rule. As this is not the question to be debated, however, but simply whether or not the island should belong to Greece, the question may be debated in the negative with more success. Among the reasons in support of the view that Crete should *not* attach herself to Greece are the following:

1. That the island would do more for itself did it seek incorporation with a wealthier power (such as England, for instance) and with a more stable and influential government.

2. There is little argument, aside from the expressed will of the Cretans themselves, in seeking union with Greece on ethnic grounds, since throughout the Hellenic kingdom there is little bond of language or unity of race, each district speaking a dialect of its own, often unintelligible or almost so, at Athens, while they possess no right to claim kinship with the ancient Greeks, as the people are more Slavonic than Hellenic, and more heterogeneous than homogeneous.

3. Alliance can hardly be made on patriotic grounds, since Crete has never belonged to Greece, while, as a nation, Greece has had little national cohesion, in proof of which we may remind you that she had to go out of the country (to Denmark) for a king. Nor have recent events, since war broke out between Greece and Turkey, shown that Crete is likely to gain much by incorporation with Greece, a bankrupt and, in a national sense, a much deteriorated power.

The arguments, you will understand, are suggested to you as among those you can use in the debate, though they must not be understood, necessarily, as the views held by us.

Why the Great Powers wish to give autonomy to Crete is to settle amicably, if possible, the question of local government or administration in the Island (since she refuses that of Turkey), while the Powers in giving her autonomy would accompany it by guarantees of European protection.

Will you please give me all the points you can on the negative side of the question: "Should the people of all races and all nations be admitted to equal rights of citizenship in the United States?"

1. The Declaration of Independence defines and guards citizenship especially by its amendments, but it does not prescribe the terms on which citizenship may be transferred from other nations to this. This seems to have been a matter which the first founders of the government regarded as one for legislation and which should vary according to circumstances. The organic law of this country offers no impediment to restrictions on the matter of rights of citizenship, if such restriction is found necessary in order to better secure the conditions necessary to the physical life of the nation.

2. There is no question as to the value of liberty and equality, as social factors, but only that which asks by what process they are to be

realized. When this nation learns that it cannot carry all this sail of lofty purpose and keep a steady keel, it is time to consider the proper rights of citizenship. By important complications, now arising within our borders, we are finding out that we have too much liberty and too little restriction. Liberty slips easily into license.

3. Five hundred years of political training lie behind and enter into the American citizen. It has taken that time to teach men how to vote and how to govern themselves, but by our laws of naturalization we are creating their peers in less than as many months. These foreigners are not simply here, but they are here clad with citizenship, to act and to be used, to be thrown on the side of any party who may win them, the special tools of the saloon politician, open to bribery, ready to be massed in labor troubles, and to be the chief factor in them.

4. The almost hopeless complications of the labor question are wholly due to the foreign element which not only leads and comprises the mob, but so cheapens the price of labor that the American workman cannot endure the competition.

5. The argument for the elevation of this class does not present itself. It shows but little tendency in the right direction, except in individual cases. The mass gravitates towards discontent and revolution.

6. The Scandinavian peasant taking land in the north and west is but a sample of immigration. The greater part of it goes to the large cities where in truth is one-tenth of our population, and where, it is to be remembered, the municipal governments are simply schools of intrigue and corruption, and where occasions for plunder present themselves which almost any bold man may grasp. It is here that the foreigner is to learn the graces of American citizenship, and we need not expect any great improvement under such license.

7. There should be some standard of character required from every aspirant to American citizenship. Each man should possess some guarantee of good intention, worthy character and general fitness for citizenhood. It is no slight thing for a man to change continents, language, citizenship, institutions, customs, hereditary surroundings and present times to throw himself *into* an environment new in every respect save the sky above him. Such a change should be made difficult, so that a man may not undertake it rashly; and for the good of society it should be recognized only with some qualifications and a proper fitness.

8. It is the preëminent duty of the government to study the ultimate good of its native-born citizens. But small service is rendered to the cause of humanity by relieving other nations of their proper duties. There is, of course, a worthy and desirable immigration, the continuance of which we may invite and even court, but it should be under effective restrictions that sharply discriminate against criminals, insane persons, Mormons, anarchists, the grossly ignorant, and also against those classes whose depraved social conditions render them unfit to assume the duties of American citizenship.

Pray how can the system of Protection endanger the welfare of a nation? SELF CULTURE states Protection to have been one of the causes of Spain's decay (*vide* the article on "The Malady of Spain," in the number for August last).

Protection is disadvantageous to a small nation, like Spain, and may not be so to a continent, like the United States, whose resources and range of natural and artificial production are well nigh boundless. You can perhaps get a better notion of this from an illustration. Imagine the atrophy that would result were any one of the individual States of the Union isolated from the rest, with a ring fence round it, and a cordon of custom houses to restrict and fetter trade.

I have been reading Livy's Rome, which stops at the close of the Second Punic War. Kindly tell me whose work I should now take up to get the continuation of the subject.

The continuation of Roman history beyond the period covered by Livy you will find taken up by Dr. Thomas Arnold, in his "History of the Later Roman Commonwealth" (B. C. 201 to A. D. 117). This work, however, you may not be able to procure readily. In that case, we would recommend you a very good general history, by a most competent writer, viz., Dean Merivale's "General History of Rome," which you can obtain for $2.00 by writing the publishers, Longmans, Green & Co., 93 Fifth Ave., New York City. Merivale's work will take you over Livy's ground again, but you may not find that objectionable. Indeed, it will be of advantage to you to read a continuous history of the Romans by a modern scholar. Merivale's work covers the entire history, from the foundation of Rome in B. C. 753, to the fall of the Emperor Romulus Augustulus, A. D. 476.

When and how was the change made, which begins the day at midnight, in-

stead of at sunset, as was the custom among the Jews?

The civil day, as we reckon it, from midnight to midnight, has been in use since the times of the ancient Egyptians (see the article Egypt in E. B., Vol. VII, page 728), section Chronology and History. The Romans also followed this period of beginning the day, and it has since continued, though the ecclesiastical day was reckoned from sunset to sunset. The Babylonians counted their day from sunrise, and the Greeks and Hebrews from sunset. Up to the year 1885, the astronomical day, reckoned as 24 hours, was held to begin at noon. It now begins at midnight, when the civil day begins.

Kindly advise me through SELF CULTURE which is correct, "all right" or "alright." Also, please give date of the reign of Solomon, and state of what country he was King. Pray, at the same time, state if the two sexes in the Republics of France and Mexico are permitted, before marriage, the license which young people take in this country. Do ladies, for instance, accept the company of young men to their parlors without some other person being present, and are they permitted to stroll the streets together without a chaperon?

There is no such word as *alright*. Unlike the word "already"—all ready—it has not suffered deterioration, and the phrase "all right" is so written, and in two words.

Solomon was King of Israel and reigned from 993 B. C., down to 953 B. C., in Jerusalem, the city of David, his father. See the articles in the Encyclopædia Britannica on Jerusalem (page 639, Vol. XIII), and on the first and second Book of Kings (page 83, Vol. XIV).

In no country are the young people of opposite sexes permitted the license they have been suffered to take in the United States. In France, as well as in Mexico, the social restraints before marriage are very rigid. Meeting together promiscuously, driving out together, and strolling the street or appearing in public or private without one or other parent or chaperon, is never sanctioned, and would be considered not only bad form but show vicious training.

May I trouble you for some points on the negative side of the debate, "Resolved: That invention has done more for the world than education?"

If we rightly understand the resolution, it seems to us that it cannot intelligently be debated, since, without education, a community would not be civilized and in a position to gain by the inventor's labor and genius. If you are on the negative side of the debate, this is all the argument you need advance.

Kindly inform me in next issue of SELF CULTURE if there is an arithmetic that treats chiefly of the measurement of barrels, casks and vessels of similar form. If so, please give me name of the work and the publisher.

Any good arithmetic, besides tables of liquid measure, will give you, under Mensuration, the rules for the measurement of volumes. What, we judge, will be more useful to you, is a work on gauging. You will find such a work in the catalogue of Henry Carey Baird, Publisher, Philadelphia, entitled "The Practical Gauger," by James B. Keene (Price $1.00). It treats of the mensuration or measurement of vessels to contain liquids, and will help you practically how to ascertain the quantity they are capable of holding when filled, and the quantity they actually contain when partially filled. The unit of measurement is the gallon, its multiples and sub-multiples. See the article on "Gauging" under that on "Mensuration" in the "Encyclopædia Britannica," page 28, Vol. XVI.

Kindly give me some suggestions, through your valuable magazine, sustaining the negative side of the debate, "Resolved: That immigration to the United States should be restricted by rigid educational tests."

1. The educational tests applied to immigrants will not keep out the most dangerous elements of our immigration. The most dangerous of all "the brawling malcontents" it will not keep out at all.

2. The educational qualification is designed to exclude the ignorant and persons of such low social condition that they are unfit for the environments of American life, but we know by experience that the illiterate are by no means the most objectionable element in our population. The turbulent and incendiary factors in the social scheme are largely made up of the half-educated in our towns and cities—of men educated just enough to make them discontented, but not enough to give them wisdom and restraint.

3. It is in the densely populated slums that these restless and resentful agitators are found. They can read but not with understanding. They can write but only just enough to concoct

a proclamation of anarchy and license. These are the real elements of social order and of free political institutions, and they are not excluded by the educational test.

4. Absolute illiteracy does not necessarily mean a tendency to vice and crime. The people we want to exclude from this country are the drones and idlers and criminals who have just enough learning to inflame their feeble minds against law and order, property and thrift, society and civilization.

5. The exclusion of immigrants merely on the educational qualification would tend to exclude from America many honest and peaceable farmers, artisans and workingmen who have remained uneducated in their own countries owing to poverty and who are industrious and in this country would be self-sustaining men, earning their own living and becoming good American citizens.

6. While it is recognized by all thinking people that a restriction of the ever-increasing immigration to this country has become an imperative necessity if the interests of our own people are not to be irreparably jeopardized, legislation against it should guard against the exclusion of immigrants from England, Scandinavia, Germany, and other countries who quickly get in touch with our customs and methods and who are welcome and useful additions to our population.

The Lodge Immigration Bill recently before Congress is objectionable in that the inhibition clause is carried to the extent of shutting out Mexicans on the southern border and Canadians on the northern from an interchange of honest labor between the two sides of the frontier at a time when there may be an urgent need of it in the other. It has a hostile instead of a friendly attitude towards Canadians and other people all along our borders, which may become a source of ill-feeling between neighboring countries with which it is desirable to establish friendly relations. President Cleveland vetoed this bill owing to the "occasional labor" clause, and also for the reason that it would be the cause of separating families by admitting those who could read and write and excluding those who could not.

Will you please explain in SELF CULTURE the privilege given the Bank of France in issuing paper money, and any advantages of the French banking system over those of other nations. I notice the Crédit Lyonnais, the second bank in size in France, only carries 10% of its deposits in cash, but has bills receivable immediately discountable at the Bank of France for 50% more, making a strong showing. Our banks carry 40 to 50% cash means, which draws 30 to 40% out of circulation as compared with the French system, which appears to me much superior to our own.

The only bank of issue in France is the Bank of France, with its branches. Its capital belongs entirely to its shareholders. It is thus a private institution, though its governors are appointed by the President of the Republic. The state has no share in the profits of the bank, except in the direct taxes which it is required to pay, of 3% on all its dividends, stamp duties on its shares and notes in circulation, and various other stamp imposts.

There is no charter limitation on the amount of notes the banks of France may issue, but the note circulation is at present limited by special legislation to 4,000,000,000 francs. The issuing of notes on deposited securities does not absorb the greater portion of the bank's capital, as it does in this country. The notes of the Bank of France (the Crédit Lyonnais is a branch of the Bank of France), are legal tender at the public treasuries and between private parties so long as they are redeemed by the bank on demand. The issue of notes within the limit fixed by law and the proportion to be observed between the amount of circulation and the metallic reserve fund are left to the discretion of the government of the bank. The present charter of the Bank of France expires December 31, 1897, and the renewal of the charter is now being warmly debated in the French Chamber. There is no doubt of its renewal, but on what terms, and for how long a period, is a matter under discussion.

An excellent work on the banking system of the United States, as compared with that of France and other countries, is "Sound Currency" (1895), a compendium of accurate and timely information on currency questions and the banking systems of the commercial world. The work is compiled by the Reform Club Committee of New York, and published by the Club Publishing Company, 52 William Street, N. Y. City. They also issue pamphlets at five cents a copy. Write for a pamphlet on the banking system of France.

Will you kindly explain the principle involved in operating canal-locks?

A canal-lock is a chamber with side walls, and with a gate at each end, opening in the same direction, and is designed to transfer boats from one level of a canal to another. The water in the lock being at the same height as the

water in the lower level, the boat enters the lock, and the gate at the lower end is closed behind it. The boat being now in a comparatively water-tight chamber, valves are opened in that portion of the upper gate which is beneath the surface of the water of the lock. Water from the upper level then flows into the chamber until it is at the same height as the water of the upper level. The upper gates are then opened and the boat passes through into the canal of higher level. In locking from an upper to a lower level the operation is reversed.

The valve or sluice system of admitting water into the chamber is worked from the bank by means of a rack or pinion or the valves revolving about a horizontal or vertical axis. In the large locks of ship canals the water is admitted to the chamber through culverts constructed in the lock masonry. The gates are operated by hydraulic power which has reduced the time of the process to one or two minutes. In the new St. Mary's lock which is being constructed, and which will be the largest of the kind in the world, a culvert connecting the upper and lower levels of water passes underneath the lock chamber, and the water is admitted through apertures in the cut-stone lock bottom. It may be well to add that the lock-gate and masonry are so constructed that the gate can only be opened when the water on each side of it is at the same level, or nearly so, and then can only be opened in the direction of the upper level. The reason for this arrangement will be seen when we consider the enormous pressure which bears on a gate holding back such an immense volume of water, while unsupported on the other side by a corresponding weight of water. The lock-gate is therefore so arranged as to close against the solid masonry of the lock, thus preventing any risk of the lock's giving way beneath the pressure of the upper course.

Will you kindly give me some points on the negative side of the question: "Resolved: That man is intellectually superior to woman."

The following arguments are usually advanced upon the negative side of the vexed question you submit:

1. It is unquestionable that the mind of woman is the human mind, as distinguished from all lower forms of mind. She has, therefore, the distinctive rational and moral faculties which pertain to man, and which fit her to be his companion.

2. A difference of mind between man and woman, as well as a general likeness, is requisite, in order to their mutual relation and adaptation. Yet this difference does not necessarily imply an inequality.

3. In body and mind, the man may, in some respects, be superior, and in other respects the woman may have the advantage. If man is more logical, woman is more intuitive. If man has more strength and force of mind, woman usually has greater fineness and delicacy. The mental faculties of man may have greater range and profundity, those of woman have a higher elevation.

4. It has been argued, on the affirmative side of the question, that a large amount of matter represents more than a small amount. Hence man, it is argued, is superior to woman in body and brain. Also, that all human energy is an exact equivalent of the amount of food consumed and assimilated. That man, by reason of his larger organs, eats and assimilates more food than woman does. Each of his organs, including the brain, is therefore capable of acting with proportionately greater energy. We argue, in reply, that size and mass are not always gauges of organic capacity. The large eye does not see better than the small eye, neither does the large ear hear more, nor the large nerve feel more keenly. Even if we admit that a larger brain may mean something, it does not necessarily imply a greater amount or higher quality of thinking in a given time.

5. It must be admitted that man's intellectual qualities have thus far made him superior to woman. But in the progress of modern civilization woman's capabilities are becoming more developed and more manifest. If her development has hitherto been less than that of man, her opportunities have also been less.

6. The decided superiority of civilized peoples, both in culture and in brain size, indicates a ratio between the degree of education and the increase of the size of the organ of thought. This phenomenon, however, merely indicates the fact that education augments brain, and not that the normal size of brain represents innate capacity.

7. Physical size of brain cannot be shown to be a factor in the development of the intellect, while the ratio between brain and brain power has not been scientifically determined. No physiological difference is observable in the structure of the male and the female brain.

8. Existing mental traits cannot be taken as indicating the real female nature and capability, since no adequate scope has hitherto been afforded to woman's endeavor.

See, in connection with these arguments, the article in SELF CULTURE for December, 1896 (page 238 of Vol. IV.), entitled "Is the Brain of Woman Inferior?"

NEW INFORMATION NOTES

The official report of the directors of the Imperial Bank of Germany for 1896 states that the aggregate of transactions during the year was 131,499,193,300 marks ($32,000,000,000), representing an increase over 1895 of 10,186,086,500 marks. The growth in the magnitude of this business is indicated by the fact that the transactions of 1876 were only 36,684,830,600 marks and as late as 1892 only 104,489,335,000 marks. The total of discounts and bills for the year, including 14,288 foreign bills amounting to 54,421,474 marks, was 3,600,251, amounting to 6,288,793,254 marks ($1,500,000,000). The number of open deposit accounts at the close of 1896 was 266,051, representing 2,798,110,877 marks. The deposits during the year were 854,024,706 marks, and the withdrawals 776,940,238 marks.

The two expeditions, one French and one American, which are at work unearthing antiquities in Babylonia have, it is stated, recently made some valuable "finds." The first and most notable result of the excavations is that the history of the Babylonian people, as recorded in cuneiform writings on tablets, is carried back at least twenty-two hundred and fifty years further than it had yet been known. In other words, there is now abundant written evidence that the Babylonian people existed and were civilized enough to be able to write at least seven thousand years B. C.

An announcement in the English papers causes a flutter of eager anticipation. It is stated that there has been found in Egypt a manuscript text of the Logia, perhaps that of the Papias. Now of all the lost works of the Apostolic Church Fathers, the one which is most wanted is the Logia of Papias, as to which so much doubt has been raised whether it ever existed. These Logia have been believed to be the original documents from which the sayings of our Lord in the synoptic gospels were compiled. It is almost too much to hope that the report is true; but, if true, it would make an epoch, if not a revolution, in the study of the Gospels.

For the maximum horse-power of a shaft some persons use the following: Multiply the cube of the diameter in inches by the turns per minute, and divide this by 205 for cast iron, 120 for wrought iron, and 82 for steel. The quotient is the horse-power of the shaft.

The British Vice-Consul at Cologne states that in 1895 the wine produced in Germany was valued at 91½ millions of marks. The production was nearly 40 per cent. more than that of 1894. New vineyards are continually being planted, especially in the Moselle district, and in some places sufficient laborers cannot be found on the spot. The 1896 harvest was abundant in quantity, but the cold and wet of the autumn have greatly injured the quality, and the prices are very low. The import of wines to Germany is still enormously greater than the export; but the latter grows apace, especially to England. That country took last year £405,104 worth. Sparkling wines have vastly increased in Germany during the last half-century, and now rank nearly equal with French champagne, while the price is considerably lower.

The annual report on Jamaica, which the English colonial office has just published, shows that the colony is, upon the whole, prosperous. The revenue during the financial year was £646,103 and the expenditure £626,934. There was an increase of £22,078 in revenue, mainly from increased imports. The public debt is £1,666,177, chiefly incurred in public works, especially railways, canals and roads. It is stated that there is a growing desire to improve the quality as well as to increase the quantity of the crops. The rate of increase in other products is greater than the decrease on sugar, and for this fruit is mainly accountable. The decline in the cultivation of sugar cane is persistent; the increase in coffee, ginger, cocoa and tobacco has been great, and in bananas very much greater. Sugar last year was only 11 per cent. of the total exports. The value of the imports last year was £2,288,946, against £2,191,745 the previous year, while the exports amounted to £1,873,105. About half the imports go from the United Kingdom, the United States coming closely behind. The trade with the latter is increasing rapidly, and American goods of many kinds are said to be supplanting English ones, partly due to the greater enterprise of American manufacturers, but mainly to the greater facilities for trade with the United States. The population of the island is estimated at 690,667.

The European country which, next to Great Britain, has the largest production of coal, is Germany. The quantity produced, however, in the latter country, does not amount to half of what is at present produced in the United Kingdom, the representative figures for 1895 being the United Kingdom, 189,661,000, and the German Empire, 79,169,000 tons. Next in point of production after Germany comes France with 27,583,000 tons, or about a third of the production of Germany; while after that comes Belgium, where the amount of production is not far behind that of France. The average value of the coal produced at the pit's mouth is for the United Kingdom, in 1892, 7s. 3¼d.; in 1893, 6s. 9½d., and in 1894, 6s. 8d., and for Germany in 1892, 7s. 4½d.; in 1893, 6s. 9d., and in 1894, 6s. 7½d. In 1895, however, the value of the coal produced in Germany rose for the first time since 1887 above the price of British coal, the average price in England in 1895 being 6s. ½d., and in Germany 6s. 9¾d. In 1887 the price of coal in England was 4s. 9¾d. and in Germany 5s. 1¾d. In France the average value at the pit's mouth was, in 1893, 9s. 2¾d.; in 1894, 9s. ¼d., and in 1895, 8s. 10d., while in Belgium it was, in 1893, 7s. 5¾d.; in 1894, 7s. 5½d., and in 1895, 7s. 6¾d.

The presence of a slight percentage of aluminum in any copper alloy having been found to improve its ability to resist corrosion, the water pipes of some marine machinery are now being made of a mixture of copper and aluminum in the proportion of 99 to 1. Aluminum bronze containing 7 to 10 per cent. aluminum, alloyed with copper, has the proportions which have been found to give the best results as to strength, small cast bars having shown an ultimate tensile strength of forty-four tons per square inch, with an elastic limit of thirty-one

tons and an elongation of 10 per cent., still better results being obtained with rolled bars.

During the season of business depression for the past three or four years the growth of the tin plate manufacture has been a strong influence in lessening an unfavorable balance of international trade, and in giving employment to idle labor. The industry still grows. Production of American tin plate for the quarter ending March 31 is estimated at 51,685 gross tons, as compared with 34,898 tons for the corresponding quarter of last year. Meanwhile importations decreased from 36,625 tons for the first quarter of 1896 to 28,477 tons for the first quarter of this year.

A law was passed a few years ago empowering the President of the United States to declare portions of the federal territory to be forest reserves. In this way many of our great national reservoirs, the sources of our rivers, were protected. Over eighteen millions of acres of forests or river sources of land were declared reserved by President Harrison, and on Washington's Birthday, 1897, President Cleveland approved the report of the committee which has been studying the matter. By his action twenty-one millions of acres of forest reserves are preserved. The combined area of these two reserves is as great as the States of Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island. The new reserves include all the central portion of the Black Hills of South Dakota, the Big Horn Mountain range in Wyoming, the basin of Jackson Lake, and the Teton Mountains south of the Yellowstone National Park in Wyoming, all the Rocky Mountains of northern Montana, an important forest in northern Idaho, the principal part of the Bitter Root Mountain region in Montana and Idaho, the Cascade Mountains of northern and southern Washington, the Olympic Mountain region in western Washington, the Sierra summit in California north of the Yosemite National Park, the San Jacinto Mountains in Southern California, and the Uintah Mountains in northern Utah.

A French journal writing of Russian railroads states that at the beginning of the present year the total length of railways open for traffic in Russia was 25,975 miles, of which 15,230 belong to the State, exclusive of the 945 miles of the Transcaspian railway, which is in the hands of the Ministry of War. About 6,000 miles of line are in course of construction, and it is estimated that by the end of the century there will be something like 32,000 miles of railway in the Russian Empire, two-thirds belonging to the State.

It is stated that George Peabody's gift of $2,500,000 for London workingmen's houses has increased to $6,000,000 in the twenty-four years since his death. Last year the trustees of the fund provided 11,367 rooms, besides bathrooms, lavatories and laundries; 19,854 persons occupied them. The death rate of infants in the buildings is four per cent below the average for London.

A correspondent writing from Niagara Falls on April 3 describes one of the greatest bridge-building feats America has seen for some little time. This was the joining of the two sections of the great new steel arch bridge across the Niagara gorge, which is to replace the old suspension bridge of the Grand Trunk railway. The arch, which will be completed in June (the present month), will have a span of 550 feet, with an upper deck for the railway (a double track) and a lower floor for a carriage-way, sidewalks, and a trolly-car tracks.

The British Consul at Rouen reports that in order to escape the French protective tariff a Swedish horseshoe nail-maker has founded factories in different parts of France, and a great Scotch firm of linoleum makers is erecting works near Rouen. Near the same place is an old-established English industry, which sends many hundreds of tons of artificial wool (prepared from woollen rags) annually to Dewsbury, where it serves for making cheap cloth and shawls.

A Consul at Jerusalem reports that the total imports and exports of Palestine were £629,537 in 1896, or £70,000 more than in 1895. Soap formed nearly a third of the total exports, the next in order of importance being oranges, sesame, beans, hides and maize. Of imports, cotton goods come first — being about a quarter of the whole — then sugar, petroleum, timber, flour, coffee, fine cloth and rice. Great Britain took £55,800 of exports, and sent £27,900 in imports. British imports to Palestine show a tendency towards diminution, but the figures may mislead, because it is difficult to say what portions of the imports from Egypt and other Turkish ports are really of British origin. French imports are likewise declining, while those from Germany show an increase. This last is unquestionably due to the German system of sending out commercial travellers to exhibit samples of manufactures as well as to study the prices and wants of the localities. The production of wine by the German and Jewish colonies in Palestine is growing both in quantity and quality.

The United States Consul at Zurich expresses the opinion that within a year the price of aluminum will fall to about 27 cents a pound, so that but three commercial metals will be cheaper than aluminum — iron, lead and zinc. The Consul's estimate is only an opinion. It can be said that the reductions thus far made have very materially widened the usefulness of aluminum.

According to "The Medical Record," eggs are useful in the following applications: "A mustard plaster made with the white of an egg will not leave a blister. A raw egg, taken immediately, will carry down a fishbone that cannot be extracted. The white skin that lines the shell is a useful application to a boil. White of egg, beaten up with loaf sugar and lemon, relieves hoarseness, a teaspoonful taken once every hour. An egg in the morning cup of coffee is a good tonic. A raw egg, with the yolk unbroken, in a glass of wine, is beneficial for convalescents."

A correspondent of the London "Times" says that nothing so daring and gigantic in the shape of mountain railways has yet been attempted as the scheme of Herr Guyer-Zeller for an electric railway up to the summit of the Jungfrau, 13,670 ft. above sea level. The Scheidegg station, 2,060 m. above sea level, will be the starting point. From here the railway will

run on the western slope of the Fallbodenhubel. At the foot of the Eiger Glacier it will turn due east, and later on due south in a tunnel winding round the solid body of the Eiger. From the Eiger Station the tunnel will proceed in a direct line towards the Mönch and the Jungfraujoch, which point it will reach at a depth of 105 m. below the surface. It will finally curve round the uppermost pinnacle of the Jungfrau, terminating on a plateau, well known to guides, at 4,100 m. above sea level. This plateau lies 65 m. below the summit. From this level a lift will take the passenger to the highest point.

The same class of permanent way and rack rail will be used as that on the Wengern Alp line. The total length of the railway will be 12,443 m. The maximum gradient will be one in four and the minimum one in ten, quite an easy climb compared, say, with Pilatus. The journey is timed to occupy exactly 100 minutes. The fare will be 40 francs. The cost of the undertaking is estimated at between 8,000,000 f. and 10,000,000 f. By the terms of their concession the Company must spend at least 100,000 francs on a permanent observatory on the summit.

Great Britain has been experimenting with submerged cannon. At a recent trial a target of oaken beams 21 inches thick and the hull of a ship protected by three inches of boiler plate were pierced by a solid shot from one of these submerged cannon.

A United States commercial agent at Weimar, Germany, reports that locomotion by means of electricity is gradually gaining ground in Europe, Germany standing first in mileage of electrical railways. Then follow, in the order named, France, Great Britain, Austria, Hungary, Switzerland, Servia, Russia, Belgium and Spain. Of the 111 lines operated in Europe, 91 are worked on the overhead trolly system, 12 on the under-ground trolly system and eight by means of accumulators.

Preparations are being made by the Anglo-Egyptian military forces on the upper Nile for an intended further advance, in July, when the river will become navigable for steamers above the fourth cataract, from Dongola to Abu Hamid. A dozen light gunboats, of iron, in sections which can be separately carried overland, are now under construction in England; these will be employed on the river above Abu Hamid to Berber. The railway to be laid across the desert from Wady Halfa to Abu Hamid is also being rapidly advanced. This railway will be two hundred miles long, of which the first thirty miles, due south of Wady Halfa, is completed. The military force at present in the province of Dongola numbers over 12,000 men, and is assisted by five gunboats.

The greatest workshop in the world, says the "Industrial World," is that of the famous Krupp at Essen. It employs between 20,000 and 25,000 hands, nearly all of whom reside in dwellings belonging to the firm. In the great mill of Essen are 1,195 furnaces of various kinds; 286 boilers, ninety-two steam hammers of from 200 to 10,000 pounds, 370 steam engines, with a total of 27,000 horse power; 1,724 different machines and 361 cranes. The eleven high furnaces produce about 600 tons of iron daily and 2,735 tons of coal and coke are used each day for fuel. The growth of the Krupp works has been something wonderful. In 1833 it employed only nine men; in 1848, seventy-four; and in July, 1888, 20,960.

Statistics show that of 10,000 smokestacks only three are struck by lightning each year, while of 10,000 church spires sixty-seven, and of 10,000 windmills eighty-nine are struck by lightning annually. An endeavor has been made to explain this condition by the fact that the smoke discharged from the smokestacks takes the electricity assembled around the building along and distributes it in the air, whereby the source of attraction for the electric spark of lightning is not only diminished, but almost disappears. This fact also explains, it is said, why people in the country kindle a large fire in the fireplace when a thunder storm is approaching.

The meeting of the British Association for the Advancement of Science in August next is to be held in Toronto, and already preparations are being made for the reception of the visitors and for excursions to all parts of Canada.

In 1896 Canada's imports of iron and steel manufactures included $3,104,416 from Great Britain; $6,421,259 from the United States; and $588,969 from other countries. In 1893 the Dominion imports of the same articles were $6,355,407 from Great Britain; $5,821,122 from the United States; and $580,621 from other countries. The United States has in the past three or four years won a commanding lead.

The odor of sweet-peas, according to a contributor to "The Medical Record," is so offensive to flies that it will drive them out of the sick-room, though it is not usually in the slightest degree disagreeable to the patient. It is therefore recommended that sweet-peas be placed in the sick-room during fly-time.

A Calcutta physician who was attacked by a swarm of bees, says "Popular Science News," was severely stung on the hand, head, face and neck, no fewer than a hundred and fifty stings being afterward taken from his neck. Fortunately he had some ipecacuanha powder with him, which he immediately had made into a paste and smeared over the head, face, and neck. The effect was most marked, preventing to a large extent the swelling and pain which invariably follows the bee's stings.

Both Matabeleland and Mashonaland, it is reported, have magnificent coal resources. The most westerly basin extends to within 100 miles of the Victoria Falls on the Zambesi, and the carboniferous formation continues almost without intermission to the meridian of Salisbury. The spot nearest to Buluwayo where coal was known to exist was some 150 miles distant (down the Khami River); an ox-wagon service was organized, but was demoralized by the tsetse-fly. Surface specimens of this coal were analyzed in Buluwayo, in 1894, and showed a quality not far short of Welsh steam. The natural point of attack for this region is from Gwelo, a northward spur of the tableland (forming the great divide between the Limpopo and Zambesi watersheds), juts forth from that district almost to the Zambesi, and terminates in an extensive plateau known as the 'Mfungubusi—the geological formation of which is carboniferous.

THE WORLD OF THOUGHT:

ABOUT BOOKS AND THEIR AUTHORS

CAPTAIN Mahan has, in his masterly "Life of Nelson," put the coping stone on the edifice of his literary work, which, besides this new achievement, embraces "The Influence of Sea Power upon History," and "The Influence of Sea Power upon the French Revolution and Empire"—two productions that confer distinction upon American literature and shed lustre upon the learned author's profession, in which he is an able and experienced officer of the United States navy. The Life of the most distinguished of England's great sea captains—"the embodiment," as Capt. Mahan terms Nelson, "of the Sea Power of Great Britain"—has just been simultaneously put upon the London and the American book markets, and in both countries it has received the highest commendation. To those who are familiar with the poet Southey's Life of the hero of Trafalgar—itself one of the classics of English literature—the elaborate work of Capt. Mahan may seem to some minds not to be needed. But the work is so truly great that it has not only the fascination of Southey's biography, but far exceeds that work in comprehensiveness and philosophic treatment, while it is immeasurably superior to it in the large professional knowledge of Nelson's time and work. Referring to Capt. Mahan's magnificent volumes, one of the first of English critical journals affirms that, "as a biography of a great man of action, it seems to us to have no rival. . . . Altogether it is a great biography, and one to be read by all men, whether they know much or little of previous attempts at the portrayal of our greatest sailor and most patriotic Englishman.

Mahan's "Life of Nelson"

Some aspects of Nelson's distinguished career our author had of course dealt with in his early and most instructive volumes, to which the present work, as Captain Mahan himself states, is the completion and rounding off. But in the Life we have the character of the great Admiral minutely though lucidly revealed, and an elaborate but interesting discussion of all the chief incidents in his professional career, with a delicate yet discriminating inquiry into those details of his personal life which have long been the subject of controversy, and thus, in a sense, public property. In dealing with these topics, though the author has not added very much, in the way of facts, to what we already know of Nelson's private and professional life, he has illuminated the whole subject by patient study and skilled analysis, and, most of all, by mature, thoughtful and suggestive views on the points dealt with, which commend Captain Mahan's treatment to the judgment of all unbiased and commonsense readers. On such delicate subjects, for instance, as Nelson's treatment of his wife, his infatuation for Lady Hamilton, and on the question of who was the mother of his daughter Horatio, the author has written with much restraint and in admirable taste, yet with a fullness which brings out the whole story and enables him to pass a considerate though critical judgment. The same may be said for the discussion of professional matters which have become historic, such as Nelson's responsibility for the execution of Caraccioli, the Neopolitan admiral.

The discussion of these and other topics by this thoroughly qualified writer tempts to quotation; but here, unfortunately, we have no space for excerpts, and indeed for nothing beyond a brief estimate of the work, and that less with the idea of reviewing than of directing the attention of readers to it. We cannot, however, part with the subject without giving some indication, hardly needed, it may be said, of the accomplished author's manner and style; and this is well and interestingly shown in the following few paragraphs taken from Dr. Mahan's character-study of the great sea captain.

"The intellectual endowment of genius," writes the author, "was Nelson's from the first; but from the circumstances of his life it was denied the privilege of early manifestation, such as was permitted to Napoleon. It is, consequently, not so much this as the constant exhibition of moral power, force of character, which gives continuity to his professional career, and brings the successive stages of his advance in achievement and reputation, from first to last, into the close relation of steady development, subject to no variation save that of healthy and vigorous growth, till he stood unique—above all competition. This it was—not, doubtless, to the exclusion of that reputation for having a head, upon which he justly prided himself—which had already fixed the eyes of his superiors upon him as the one officer—not yet, indeed, fully tested—most likely to cope with the difficulties of any emergency. In the display of this, in many self-revelations—in concentration of purpose, untiring energy, fearlessness of responsibility, judgment, sound and instant, boundless audacity, promptness, intrepidity, and endurance beyond all proof—the restricted field of Corsica and the Riviera, the subordinate position at Cape St. Vincent, the failure of Teneriffe, had in their measure been as fruitful as the Nile was soon to be, and fell naught behind the bloody harvests of Copenhagen and Trafalgar. Men have been disposed, therefore, to reckon this moral energy—call it courage, dash, resolution, what you will—as Nelson's one and only great quality. It was the greatest, as it is in all successful men of action; but to ignore that this mighty motive force was guided by singularly clear and accurate perceptions, upon which also it consciously rested with a firmness of faith that constituted much of its power, is to rob him of a great part of his due renown."

McCarthy's "History of Our Own Times"

THE announcement of a new volume, from 1880 to "the Diamond Jubilee," of Mr. Justin McCarthy's "History of Our Own Times," and the cabled news of the talented journalist's serious illness, which we are grieved to hear, suggest in this department a brief reference to the writer, with some comment upon his chief work. Historical writing requires in him who takes to it many and unusual gifts, and especially so in the case of one who attempts to deal with contemporary events. In Mr. McCarthy these gifts are manifestly present, together with a power of interesting and instructing the reader, and that in an unusual degree when we remember that his topics are those with which most men have been currently familiar. Special interest will be felt in the new instalment of his history, since it deals with questions in which the author, as a parliamentary member, legislator and leader for a number of years of a party in the English House of Commons, has been intimately and actively concerned, and in the shaping of which he and his party have been considerable participators. In the fields of labor in which he has long and earnestly worked, Mr. McCarthy has deservedly won an honorable position and established for himself a high political and literary reputation. The latter is chiefly founded upon his "History of Our Own Times," his most important and effective work. It would be difficult, as the writer of this has elsewhere said, to rate too highly that unique performance, for unique it is to write a narrative of contemporary events in England at once so full and perspicuous, but without unnecessary and wearying detail—a narrative that is bright without sensation, rapid without slipping or falling into error, and holds the attention closely throughout. Still more difficult would it be to overpraise the author's balance of mind, his transparent honesty of purpose, his clear judgment, and the faculty he possesses in an eminent degree of inspiring confidence. For these safe things he may well forego literary brilliance or the coruscations of genius, which, if we could even trust these often erratic qualities, would be singularly out of place in a "history of our own times."

Nor is it the least of Mr. McCarthy's merits, that the lively interest he manifestly has taken in the work fashioned by his hand he imparts to the reader, with the faculty of seeing things in proportion—a great point in the writing or reading of contemporary history—while he diffuses some of his own cheery optimism and imbues his audience with his strong sense of what is both just and right. Nor are the artistic qualities of the *littérateur* and the higher journalism wanting in the book. There is a pleasing art of arrangement in presenting the topics for review and comment, and a dramatic power of introducing, analyzing and hitting off character. Very noticeable is this in the striking and vivid pen-portraits given us of the more prominent English public men and statesmen of the time. In these studies Mr. McCarthy shows, at least, his intellectual sympathy with the great personal forces which have been instrumental in the making of modern England, and his admiration for those types of public men which form the basis of the national character.

Hardly less effective is the compact, yet lucid and interesting, manner in which the great public questions of the time are brought forward and discussed, and with manifest justice to both sides, as well as to the participants in the controversies. Here again, besides the high qualities of the narrator, there is remarkable power shown in seizing and presenting the essential points of the matter under review, as well as calmness and impartiality in passing judgment. American readers, especially, will thank the author for his treatment of the international questions with which England has had to deal during the period covered by the work. Here the dispassionateness, as well as the sense of justice, in the historian has to be commended, particularly in the chapter dealing with the American Civil War, and its pendent questions —the cruise of the *Alabama*, and the results of the Alabama arbitration. In the treatment of these topics, which long vexed the diplomatic breast on both sides of the Atlantic, Mr. McCarthy has meted out entire justice to the American nation, without in any measure being disloyal to England, though, occasionally, he is righteously indignant with her. A broad humanity characterizes the author's discussion of other matters touching England's relations with foreign powers and her own dependencies.

Not less worthy of note is Mr. McCarthy's wise treatment of home affairs within the kingdom, including the chief burning questions of the period from the era of the Corn Law agitation to that of the industrial wars and socialistic outbreaks that menace England's and the world's peace in our own time. His views on these grave topics, though rarely profound, are usually apt and sensible, reaching always the kernel of the matter, and presenting it with kindly and conciliatory comment and a large admixture of humane feeling. Even on the subject of Irish grievances there is no bitterness, though some pathos; and where England is arraigned, the strictures are comparatively mild and reserved. We shall look forward eagerly to the completion of the work, and to the possession of the instalment covering the later years of England's political, industrial and social annals.

G. M. A.

EDUCATIONAL STUDIES FOR YOUTH:

FIGURES OF SPEECH

MANY friends of SELF CULTURE, among them not a few teachers and numerous young students of literature, have from time to time asked that a section of the magazine might be devoted to the technical study of English literature. It is to meet the wishes of these and other friends that we purpose, in occasional issues, to utilize this young folks' department by publishing a series of papers of an educational character on Literature, classifying it as regards form and matter, analyzing its structure, explaining the elements and qualities of style, and setting forth, wherever practicable with examples, the varied artifices of literary construction. To this will be added explanations of technical terms found in manuals of English Composition, with practical and useful hints on the correct usage, in speech and writing, of our noble mother tongue.

In the present issue, we anticipate somewhat the plan we had sketched (chiefly because we were specially asked for an early enumeration of the Figures of Speech), by supplying herewith an explanation of one of the chief elements of style — Figures of Speech. — ED. S. C.

Figures of Speech

These are intentional deviations from the ordinary spelling, form, construction, or application of words. The last class, which are known as Figures of Rhetoric, are the most important. They dignify style, enrich it by increasing its facilities of expression, give pleasure by employing the mind in detecting and tracing resemblances, and frequently convey the meaning more clearly and forcibly than plain language.

1. METON'YMY (a change of name) puts one word for another; as the cause for the effect or the effect for the cause; the container for the thing contained; the sign for the thing signified; or the abstract for the concrete.

Example: Gray hairs for *old age; bottle* for *inloxicating drink; sceptre* for *royalty; beauty* and *chivalry* for *beautiful women* and *brave men.*

2. MET'APHOR (a transfer to one word of the sense of another). — A comparison implied in the language used. It is a transference of the relation between one set of objects to another, for the purpose of brief explanation.

Ex.: "He *bridles* his anger."

A Metaphor may be expanded into a Simile; thus, in the case of the example given:

Ex.: "He restrains his anger as a rider bridles his horse."

A *mixed metaphor* is where two or more metaphors are confused in a single expression, such as

"I *kindled* a *seed* of future trouble."

3. VISION. — A description in strong and lively colors, so that the past, the distant and the future are represented as present.

Ex.: "Even now, methinks, as pondering here I stand,
I *see* the rural virtues leave the land."

4. ON'OMATOPŒ'IA (the making of a name), or Imitative Harmony. — The use of a word or phrase, the sound of which corresponds with, or resembles, the thing signified.

"Soft is the strain when zephyr gently blows,
And the smooth stream in smoother numbers flows;
But when loud surges lash the sounding shore,
The hoarse rough verse should like the torrent roar:
When Ajax strives some rock's vast weight to throw,
The line too labors and the words move slow;
Not so when swift Camilla scours the plain,
Flies o'er the unbending corn and skims along the main."

5. PLE'ONASM (exaggeration). — The employment of more words than are necessary to express the sense. An enumeration of particulars, which might be included in one general term, although not necessary to the sense, is not objectionable, provided emphasis is desired. (See No. 16, *infra.*)

"He went home full of *a great many* serious reflections."

6. ELLIP'SIS (a want, defect). — The omission in a sentence of some word or words necessary to a full and regular construction.

"Homer was the greater genius; Virgil, the better artist: in the one we most admire the man; in the other, the work."

7. HYPER'BATON (transposed).—The transposition of words out of their natural and grammatical order.

"What shall we say since *silent now is he?*"

8. ANTITH'ESIS (opposition). — The statement of a contrast, or the opposition of thoughts and ideas.

"In *peace* there's nothing so becomes a man
As mild behavior and humility;
But when the blast of *war* blows in our ears,
Let us be tigers in our fierce deportment."

9. SIM'ILE (a like thing), formally likens one thing to another.

"Him, *like the working bee in blossom dust*,
Blanched with his mill they found."

10. POLYSYN'DETON (joined in various ways).—The repetition, for effect, of conjunctions, otherwise unnecessary. (The opposite of asyndeton.)

"All that is little *and* low *and* mean among us."

11. ASYN'DETON (unconnected, without conjunction).—The omission, for effect, of conjunctions, otherwise necessary.

"The wind passeth over it — it is gone."

12. AN'ACOLU'THON (inconsequent). —A want of harmony in the grammatical construction of the different parts of a sentence.

"What shall we say, since silent now is he,
Who when he spoke, all things would silent be?"

13. IRONY (dissimulation) expresses a meaning contrary to that conveyed by the speaker's words.

"No doubt but ye are the people, and wisdom will die with you."

14. ALLU'SION (playing or sporting with) occurs when a word or phrase in a sentence, by means of some similitude, calls to mind something which is not mentioned.

"It may be said of him that *he came, he saw, he conquered.*"

15. ECPHONE'SIS (a crying out).—An animated or passionate *exclamation*. It is generally indicated by the interjections O! Oh! Ah! Alas!

"O my soul's joy,
If after every tempest come such calms,
May the winds blow till they have wakened death."

16. APARITH'MESIS (a count over).— An enumeration of particulars for the sake of emphasis.

"Rocks, caves, lakes, fens, bogs, dens, and shades of death."

17. TRANSFERRED EPITHET.—The removing of an epithet from its proper subject to some allied subject or circumstance.

"Hence to his *idle bed*."

18. EROTE'SIS (a questioning).—An animated or passionate interrogation.

"What, Tubero, did that naked sword of yours mean in the battle of Pharsalia? At whose breast was it aimed?"

19. ANTONOMA'SIA (call by another name) puts a proper name for a common name, or a common name for a proper name; or an office, profession or science instead of the true name of a person.

Solomon for a *wise man*. *Cræsus* for a *rich man*. Galileo, the *Columbus* of the heavens.

20. EPIZEUX'IS (a fastening together). —The immediate repetition of some word or words for the sake of emphasis.

"Alone, alone, all, all alone,
Alone on a wide, wide sea."

"Arm! Arm! it is—it is—the cannon's opening roar."

21. PERSON'IFICA'TION represents inanimate objects and abstract ideas as living.

"The mountains *sing* together, the hills *rejoice* and *clap hands*."

22. AN'ADIPLO'SIS (make double).— The use of the same word or words at the end of one sentence, or of one clause of a sentence, and at the beginning of the next.

"Has he taste for *blood? Blood* shall fill his cup."

23. ANAPH'ORA (a coming up).—The repetition of a word or phrase at the beginning of several sentences, or of several clauses of a sentence.

"*By foreign hands* thy dying eyes were closed,
By foreign hands thy decent limbs composed.
By foreign hands thy humble grave adorned,
By strangers honored and *by strangers* mourned."

24. OXYMO'RON (something absurd but has a point).—An antithesis arising from the opposition of two contradictory terms.

"Thus *idly busy* rolls their life away."
"To make haste slowly."
"A cruel kindness."

25. EPIPH'ORA (an addition).—The repetition of a word or phrase at the end of each of several sentences or clauses of a sentence.

"Are you delighted with *literature*, who hate the foundation of all *literature?*"

26. PAR'ONOMA'SIA and ANTANAC'LASIS (a bending back against).—A play upon words. The same word is used in different senses, or words similar in sound are set in opposition to each other. Paronomasis is by some restricted to proper nouns, and Antanaclasis to common nouns.

"And brought into this *world* a *world* of woe."

27. ANTIS'TROPHE (a turning about).—An alternate conversion of the same words in different sentences.

"Your servant, sir." "Sir, your servant."

In a more extended sense it is applied to the inversion in one sentence, of the order of the words in that which precedes it.

28. PROS'THESIS (a placing to).—An etymological figure by which a letter or syllable is put at the beginning of a word.

"*A*down."

29. ANACŒNOSIS [*an''-a-sē-nō'-sis*] (communicate, make common).—By this the speaker appeals to the judgment of his audience on the point in debate, as if their feelings were the same as his.

"Suppose, Piso, anyone had driven you from your house by violence, what would you have done?"

30. HYPER'BOLE (excess, overstrained phrase) expresses more than the literal truth. It consists in magnifying objects beyond their natural bounds, so as to make them more expressive or more intelligible.

"Beneath the lowest deep, a *lower deep*,
Still threatening to devour me, opens wide."

31. AL'LEGORY.—A sentence or discourse in which the principal subject is figuratively described by means of another subject resembling it. It is made up of continued allusions. Tennyson's "Idylls of the King," or Bunyan's "Pilgrim's Progress" is an example of this figure.

32. LIT'OTES (plainness, simplicity).—By denying the contrary, implies more than is expressed.

"Immortal names
That were not born *to die*." *i. e.* That *will live*.

33. CLI'MAX (a ladder).—An ascending series of ideas or thoughts increasing in strength or importance until the last.

"It is an outrage *to bind* a Roman citizen; *to scourge* him is an atrocious crime; *to put* him *to death* is almost a parricide; but to *crucify* him—what shall I call it?"

The opposite of this figure is ANTI-CLIMAX, or the arrangement of the terms or particulars of a sentence or other portion of a discourse, so that the ideas suddenly become less dignified at the close.

"A good Christian, a good citizen, and a good shot with a rifle."

34. PROLEP'SIS (an anticipating).—The anticipatory use of a word or phrase.

"They beat with their oars the *hoary* sea" instead of "They beat the sea with their oars and made it hoary."

35. CATACHRE'SIS (misuse of a word).—An abuse of a figure, by which a word is wrested from its original application, and made to express something at variance with its true meaning.

"Her *voice* was but the *shadow* of a sound."

36. AP'OSIOPE'SIS (become silent).—The leaving of a sentence unfinished, in consequence of some sudden emotion of the mind.

"What! do you—do you—charge me with this, a man who has never in his life pursued anything but virtue? What you have pursued—but I am silent, lest I should seem to have brought a charge against a friend."

37. APOS'TROPHE.—"A turning away" from the regular course of the composition to address something absent as if it were present.

"Death is swallowed up in victory. O death, where is thy sting? O grave, where is thy victory?"

38. EP'IGRAM (an inscription).—A short, pointed, or witty saying, the true sense of which is different from that which appears on the surface.

"Solitude sometimes is the best society."

39. INNUEN'DO (hint, sign).—A form or allusion, in which a thought, instead of being plainly stated, is merely suggested or implied.

"He did his party all the harm in his power—he spoke for it and voted against it."

40. EU'PHEMISM (speaking well).—A circumlocution used to soften a harsh or a direct way of expressing a thought.

"Your conduct is hardly in accordance with the principles of morality."

41. SAR'CASM (a biting, "flesh-tearing" sneer).—A keen, reproachful, but at the same time witty, expression.

"Ward has no heart, they say; but I deny it:
He has a *heart*, and *gets his speeches by it!*"

EXERCISES

Criticise and rewrite the following sentences, noting the figures of speech, or improprieties of expression :—

(1) "Immersed in the politics of Europe, and moulding the destinies of nations, was very different from either guiding his spindle or directing the loom, and must have exerted a corresponding different influence on their intellectual powers."

(2) "In stooping down to drink, the weight of the cart forced the mare's head just into the water, and before she could be released was drowned."

(3) "Probably the tenant-farmers who have already got their rents fixed, have no lively sense of favors to come to urge them to the greasing of palms which have already toiled for them."

(4) "At Monmouth he makes the acquaintance of the bookseller's two very pretty daughters, of whom his highness observes, as Lyell or Murchison would of lumps of nickel, they were the most perfect specimens of innocent girls I ever met with."

(5) "The name of Flaxman is among the most distinguished of British sculptors."

(6) "Amen said Yeo; and many a honest voice joined in that honest compact and kept it, too, like men."

(7) "Close as we stood to the choir, it was well-nigh impossible to distinguish the separate voices; each blended into one another with such perfect harmony."

(8) "These are the sterile battles over those defunct and moribund bodies."

(9) "The unnatural marriage was divorced in the same year."

(10) "I kindled a seed of future troubles."

(11) "They did reject him, of course, but his speech remains as a warning for all who may adopt another course."

(12) "The idea which underlies most of his plays is a struggle of virtue assailed by external or inward temptations."

(13) "Undoubtedly one of the very first aims of all inventors is to reduce trained mechanical labor to as near the absolute zero point as possible. But possibly the whole of Sir W. T.'s inventions cannot claim that characteristic."

(14) "During the recess you will continue to gather that practical knowledge and experience which form the solid basis of legislative aptitude."

Expose the absurdity of the following mixed, confused, or incongruous metaphors, and express the same sense in consistent terms :—

(1) "The rattle of firearms is looming in the distance."

(2) "The harvest season is now drawing near, and it is time to unleash the dormant sickle."

(3) "That which lies beneath the surface only the future can adequately explore."

(4) "He unravelled all these obscurities, and with his penetrating illustrations threw light on all these unparalleled complications."

Indicate the justification of the metaphors in the following expressions :—Imperious sea; gates of death; eating cares; *altum mare;* sea of troubles; *pallida mors;* morning of life; merciful clime; fleecy winter; tottering state; shallow fears; reasoning in a circle; Athens, the eye of Greece; the dying day; winged words; blind affection; grovelling superstition; heavy sorrow.

"The age of Elizabeth superabounded in metaphor; the age of Anne revelled in antithesis; the age of Victoria is overburdened by quotation." Illustrate this by reference to some of the representative works of each of the periods referred to.

Criticise the following, naming the figures of speech employed :—

(1) "They recovered hope when they saw the blue bonnets approaching."

(2) "A stupid moment motionless she stood."

(3) "A cry that shivered to the tingling stars."

(4) "Smoothing the raven down of darkness till it smiled."

(5) "I am of ladies most deject and wretched,
That sucked the honey of his music vows."

(6) "Put out the light, and then put out thy light."

(7) "He set the glittering terror on his brow."

(8) "Declamation roared, while passion slept."

(9) "Shades of the Dead! have I not heard
your voices
Rise on the night-roaring breath of the gale!"

(10) "Earth felt the wound; and nature from her seat
Sighing through all her works gave sounds of woe."

(11) "Impious sons their mangled fathers wound."

(12) "Music's golden tongue
Flattered to tears this aged man and poor."

(13) "Love seldom haunts the breast where Learning lies,
And Venus sets e'er Mercury can rise."

(14) "He stood upon the dizzy cliff."

(15) "It is evidently the work of a facile pen."

(16) "From the gloom of the tunnel we emerged to the glad sun."

(17) "But let my due feet never fail
To walk the studious cloisters' pale."

THE SCIENCE OF FAMILIAR THINGS:

II.—ACCELERATED AND RETARDED VELOCITY

WHEN a body is moved by a force which gives it continually a steady pull or push, its velocity continually increases as long as the force remains stronger than any which may act against it. The velocity is said to be *accelerated* or quickened. If there is no obstacle to be overcome, other than the inertia of the body, the increase of velocity follows an unvarying law. The falling of a stone, pulled down by the constant attraction of the earth and moving faster and faster as it falls, is a familiar illustration of velocity that is accelerated regularly. But we can get at the law of the increase better, perhaps, by studying a simpler though purely imaginary case.

Accelerated Velocity

We will imagine an iron ball, weighing one pound, to be suspended in the air by some means which will prevent its falling, but will leave it free to move in any direction, and we will suppose that it can move without encountering the slightest resistance from the air. The ball is motionless, but by means of a string attached to it which, at a convenient distance in a horizontal direction, passes over a frictionless pully, and to which a weight may be attached, we can apply to it any force we may choose to experiment with. The slightest pull upon this string will set the ball moving, and, of course, the stronger the pull the more quickly it will move. We will experiment with different weights until we find one just sufficient to move it six inches in one second.

The first thing to be decided is with what velocity this ball is moving at the end of the second. During that time it has traversed a distance of six inches. Shall we therefore say that its velocity is six inches a second? Undoubtedly this is its *mean*, or *average*, velocity; but since it began with no velocity at all, being in a state of rest, and after starting slowly was drawn faster and faster by the steady pull of the string, it is clear that at the end of the second it must be moving at a rate of more than six inches a second, else it could not have passed over that space in a second's time. In fact it is now moving with a velocity of twelve inches, or one foot a second, six being the mean between zero and twelve. It is important that this point should be perceived clearly. *Whenever a body starting from a state of rest moves with a constant increase of velocity for one second, or any other given time, the distance which it passes over in that time is always one-half of the distance it would travel were its velocity throughout the time that with which it ends.* Its quickness near the end of the time is exactly balanced by slowness at the beginning.

If the pull of the string is now stopped, the moving ball will be carried by its momentum twelve inches in the next second, moving with a uniform velocity, and it will continue to move with this acquired velocity of one foot a second as long as there is nothing to oppose its progress. But if the pull is not stopped, then it will be drawn six inches farther than it would otherwise have gone, and it will gain an additional velocity of one foot a second, so that at the end of the second second it will be moving with a velocity of *two* feet a second. In the third second, the force still acting, another increase of a foot a second will be added to its velocity, and at the end of that time it will be moving at the rate of *three* feet a second. In every succeeding second the same thing will happen; the velocity will be increased by the exact amount which was imparted in the first second.

Acceleration

This velocity which is added every second, when a body free to move is acted upon by a constant force, is called *acceleration*. If we know its amount in any given case, together with the time during which the force has acted, then the final velocity may be found by simply multiplying the acceleration by the time. This is supposing that the body started from a state of rest. If it was already moving when we began to count time we must add to the product the velocity with which it started. For example, in the present case at the end of ten seconds the ball will be moving with a velocity of ten feet a second. If it had started with a velocity of, say, 50 feet a second, then its

final velocity would have been 60 feet a second.

Distance Traversed

Under this heading we may ask (1) how far a body moving with a regularly-accelerated velocity will travel in every successive second or in any particular second after the time of starting, and (2) how far it will travel during the whole time. Both problems will be found very simple of solution, if we will give a little study to the movement of the ball with which we are experimenting.

1. In the first second the ball moves six inches. In the next it moves one foot because of its momentum, and is drawn six inches farther by the steady pull of the string. In this second, then, it moves in all eighteen inches, or *three* times the distance moved in the first second. At the end of the second second it has a velocity of two feet a second, and this alone will carry it two feet in the third second, while the string will pull it six inches farther. It will, therefore, travel two and a half feet in the third second, or *five* times the distance travelled in the first. In the same way we may ascertain the distance travelled in every succeeding second, taking account of the velocity at the beginning of the second and adding the distance due to the continued action of the force. We shall find that in the fourth second the body travels *seven*, in the fifth *nine*, in the sixth *eleven* times as far as it does in the first second. We need go no farther to discover that we have struck a regular series of the odd numbers — 1, 3, 5, 7, 9, 11, etc., and we shall find this series to hold however far we may carry the calculation. Observe that each number of the series, as 11, may be obtained by doubling the number of the second (the sixth, in this case) and subtracting 1. Upon this series is based the rule, given below, for calculating the distance travelled in any given second.

2. In the first second the body travels a certain distance, which, remember, is always one-half of the "acceleration." In the second second it moves three times as far. In the two seconds together it moves, therefore, *four* times as far as in the first alone. In the third second it moves five times as far as in the first, and this added to the four already obtained, gives the sum nine. In three seconds, then, the body moves *nine* times as far as in one. In the same way we may find that in four seconds it moves *sixteen;* in five seconds *twenty-five;* in six seconds *thirty-six* times as far as it does in the first second after starting. We have alighted upon another regular series, that of the square numbers, 1, 4, 9, 16, 25, 36 — numbers obtained by squaring, or multiplying by itself, each of the cardinal numbers 1, 2, 3, 4, 5, 6, etc.— and thus we discover that *the whole distance travelled is proportional to the square of the time.*

Rules

From what precedes we may obtain the following three fundamental rules, which are applicable to any case of regularly accelerated velocity:

I. *The acceleration and time being given, to find the final velocity, multiply the acceleration by the time. To this product add the initial velocity, if any.*

II. *To find the distance travelled in any given second after the time of starting, double the number of the second, subtract 1 and multiply the remainder by one-half of the acceleration — that is, by the distance travelled in the first second.*

III. *To find the distance travelled in the whole time, multiply the square of the time by one-half of the acceleration.*

Examples—The velocity of a moving body is accelerated 6 feet a second:

1. What is its velocity at the end of the 10th second after starting? Ans. 60 feet a second.

2. How far will it travel in the 10th second? Solution: Twice 10 is 20; 20 minus 1 is 19; 19 multiplied by 3 is 57. Ans. 57 feet.

3. How far will it travel in 10 seconds? Solution: The square of 10 (10 multiplied by 10) is 100; 100 multiplied by 3 is 300. Ans. 300 feet.

Retarded Velocity

Velocity may be retarded as well as accelerated. Indeed in all cases of motion in bodies on or near the earth's surface retardation of velocity takes place. The resistance of the air retards the flight of a projectile; friction retards the velocity of a railway train and of a revolving wheel. In these and similar cases the retardation is not uniform, but varies with the velocity of the moving body, so that the calculation of its effect is a somewhat complicated

problem. If, however, the retardation is regular, its effect is the reverse of that of regular acceleration and may be calculated by means of rules easily derived from those just given. A few examples will render this clear.

Examples of Retardation

A body is moving with a velocity of 60 feet a second against a force which retards it 6 feet every second:

1. How many seconds will it move before coming to a state of rest? Solution: If it loses a velocity of 6 feet every second, to lose a velocity of 60 feet will require 10 seconds — 60 divided by 6.

Ans. 10 seconds.

2. How far will this body move in the 8th second after the retardation begins? Solution: Rule II enables us to find the distance travelled in any given second by a body moving with an accelerated velocity. The same rule, in a case of retardation, will enable us to find the distance which is *not* travelled—which must be subtracted from the distance over which the body would have moved had its velocity not been retarded. The problem is worked out thus: Twice 8 is 16; 16 minus 1 is 15; 15 multiplied by 3 (one-half of the retardation), is 45; 60 (the distance the body would have gone if unretarded), minus 45 is 15. Ans. 15 feet.

3. How far will this body move before coming to a state of rest? Solution: It will move just as far as it would do if starting from a state of rest it moved with an acceleration of 6 feet a second until it acquired a velocity of 60 feet a second. To do this the body must move 10 seconds, as we find by dividing 60 by 6. We now have a problem of acceleration which comes under Rule III.

Ans. 300 feet.

FALLING BODIES

WE are now in a position to solve a few problems relating to falling bodies. But first we will consider a moment the force which pulls them down.

Gravity . . . Gravitation

By *gravity* is meant the force by which the earth holds a body upon its surface or draws a body down upon its surface when it has been raised from it and left without support. *Gravitation* is the tendency which a body has to fall to the earth's surface or, in general, to approach any other body. We speak of the *force* of gravity, of the *law* of gravitation. Both words are derived from a Latin word, *gravis*, which means "heavy."

The Law of Universal Gravitation, as enunciated by Newton, declares (1) that every body in the universe attracts every other body with a force which is proportional to its mass and which diminishes in intensity as the square of the distance through which it is exerted increases, and (2) that the attractive force of any body may be treated as though it emanated from the body's centre of mass, or centre of gravity, as we commonly say. Thus the earth has a certain attractive force, measured by its mass. This force, though it is really a combination of all the forces of all the particles of matter which go to make up the earth's mass, is practically concentrated at the earth's centre. We may judge of its strength from the weight of bodies upon the earth's surface, for it is this attraction which gives them their weight. The strength of the force diminishes outward from the earth rapidly. At a distance of eight thousand miles from the earth's surface, or at twice the distance of the surface from the centre — taking the earth's diameter as eight thousand miles — the force is, not one-half, but one-fourth of what it is at the surface. At a distance from the earth's centre of three times that of its surface the force is only one-ninth as great; at four times the distance it is one-sixteenth as great, and so on. This is what is meant by the statement that the force diminishes as the square of the distance increases.

The Strength of Gravity

Since we are now to deal with gravity as a moving force, we wish to know, not merely how much it causes a body to weigh, but also how far it will pull a body down in one second — what acceleration it gives to a falling body's velocity. It is clear from what has just been said that this will depend in a measure upon the body's distance above the earth's surface. At a

height of five miles, say, the force of gravity cannot be exactly the same as at the surface. But five miles is a small distance in comparison with four thousand miles, and all ordinary problems of falling bodies deal with distances far within the limits of even five miles, so that the variation in the force of gravity due to this cause is so slight that it may be left out of the account and the force may be considered constant. There is, however, another point which cannot be neglected, if we are seeking for very exact solutions. Owing to the fact that the earth is not a perfect sphere and that its surface is not everywhere at the same distance from its centre, the strength of gravity is not exactly the same the earth over. It is not the same in the latitude of London as in that of Paris, and in the the latitude of Boston it has a different value still. Careful experiments have been made for the purpose of ascertaining its strength in different localities, and it has been found that the acceleration imparted by gravity ranges between 32.091 feet a second, at the equator, and 32.255 at the poles. In England its value differs but slightly from 32.2 feet, and these are the figures usually adopted in English treatises on physics. But for ordinary purposes we may regard the round number 32, omitting the fraction, as sufficiently exact. This, as we understand, means that a body is pulled down by gravity 16 (16.1) feet in the first second, acquiring a velocity of 32 (32.2) feet a second.

The Foot-Poundal In our experiment we used a ball weighing one pound and a force which gave it an acceleration of one foot a second. The reason for selecting this particular weight and this particular force was that they represent the English unit of force — the foot-poundal, *a force which will give to a pound mass an acceleration of one foot in one second.* Since gravity will give to this mass an acceleration of 32.2 feet a second, the poundal has a strength a trifle less than one thirty-second of that gravity. In other words, the weight which we should have had to attach to our string to give the ball an acceleration of one foot a second would have been a trifle less than half an ounce. We may, therefore, associate in mind the poundal with the force exerted by a half-ounce weight.

SOME QUESTIONS ANSWERED

TWO or three questions which sometimes cause a little perplexity may be disposed of here.

1. Why does not a large stone — a "heavy" stone — fall more quickly than a small stone — a "light" stone? The answer is that, although the large stone is pulled down by the earth's attraction more strongly than the small stone, yet being more massive it requires more force to impart to it the same velocity in the same time. Had we used in our experiment a two-pound ball instead of one weighing one pound, to give it a velocity of one foot a second would have required a weight twice as heavy as that used.

2. Why does a small shot fall more rapidly than a feather which has the same weight? Because of a difference of resistance in passing through the air. The instant a body begins to fall it encounters resistance; it must make a way for itself through the air. The feather must move out of its way more air than the shot. A considerable part of the gravity which acts on the feather is employed in moving air and only a small part in making the feather fall. In a vacuum, which may be formed under the receiver of an air-pump, the feather and the shot will keep together, in their fall, neither being retarded.

In the parachute, by means of which a person may descend with safety from a balloon, a practical use is made of this fact illustrated by the feather. At first the parachute — which is simply a large umbrella — descends rapidly. But it quickly acquires a velocity such that the resistance offered by the air is exactly equal to the force exerted by gravity upon it and its burden. The acceleration then stops, and thereafter it descends by its momentum at a uniform rate, while gravity expends its whole strength in removing the air from the parachute's path.

3. To return to our first question, is it

strictly true that a large stone falls no more quickly than a small stone? No. Ordinarily there is no perceptible difference in the time in which they fall from a given height. But make the experiment of dropping from a great height a marble and a grain of sand. The marble will reach the ground first, and the reason is this: The hole which each must pierce through the air, so to say, has the same diameter as the falling body. Now, if two holes of different diameters, but of the same length, be bored through the air, or through anything else, their capacities for holding anything — their volumes — will be proportional to the *squares* of their diameters. That is to say, if one has *twice*, *three* times or *four* times the diameter of the other, it will contain *four* times, *nine* times, or *sixteen* times as much as the other. If two balls are falling, of which one has ten times the diameter of the other, the larger must move out of its path one hundred times as much air as the smaller. But the volumes of two balls — and their weights, if they are of the same material — are proportional to the *cubes* of their diameters. That is, if one has *twice*, *three* times or *four* times the diameter of the other, it will weight *eight*, *twenty-seven* or *sixty-four* times as much as the other. In the case of these two falling balls, then, the larger weighs a thousand times as much as the smaller, but the resistance offered to it by the air is only one hundred times as great. Hence the smaller ball will labor at a disadvantage in comparison with its larger companion and its fall will be more retarded. Though it has only one-hundredth as much work to do, it has but one thousandth as much strength with which to do it.

This disproportionate retardation from the air finds practical exemplification in the science of gunnery. An iron ball, with a diameter of but one inch, meets practically with ten times as much resistance from the air as one having a diameter of ten inches, both leaving the muzzle of the gun with the same velocity. The retardation of the smaller ball is ten times as great as that of the larger, for the reason just stated in the case of falling bodies.

PROBLEMS

THE following problems can be solved by means of the rules given above, under "Acceleration." Leave out of the account the resistance of the air, and regard the acceleration as 32 feet a second. Answers will be given next month.

1. What distance will a stone fall from a state of rest in two seconds? In five seconds? In ten seconds? How far will it fall in the eighth second?

2. A stone thrown vertically downward is given an initial velocity of 40 feet a second. How far will it fall in five seconds?

3. A bullet dropped from a balloon reaches the ground in 15 seconds. How high is the balloon? With what velocity will the bullet strike the ground? How far will it fall in the twelfth second?

4. A church spire is 144 feet high. How long will it take a stone dropped from its summit to reach the ground? With what velocity must a stone be thrown to reach the top of this spire?

5. A bullet is shot upward with an initial velocity of 960 feet. How long will it continue to rise? To what height will it ascend? How far will it rise in the tenth second?

6. A balloon is 2,304 feet high. How long will it take a bullet dropped from the balloon to reach the ground? With what velocity will the bullet strike the ground?

ANSWERS TO QUESTIONS AND PROBLEMS

1. A revolving wheel, like every other moving body, has momentum, which can be taken out of it only by the application of force. The force may be simply friction or the wheel may be connected by belting or gearing with machinery and may be doing useful work. In either case it will run until the force (power) stored up in it is exhausted.

The fly-wheel of a steam engine — and the same is true of that of a foot-lathe or of a sewing machine — is for the tempo-

rary storage of force. The force being applied through the intervention of a crank, is put into the wheel intermittently. When the crank is at right-angles with the direction of the pull or the push the steam (or the foot) exerts its full strength, and it puts into the wheel, not merely force enough to do the work required of it, but also a large surplus of force, which keeps the wheel running and working during the time when the crank is passing the "dead centre" and the steam or the foot is temporarily inoperative.

2. The use of the springs of a wagon can be seen the most clearly by considering what must happen to a vehicle heavily laden and moving along a rough road, without springs. Suppose that it carries a ton's weight and that it is moving at the rate of eight miles an hour, or about twelve feet a second. One of its wheels strikes an unyielding obstacle, as a rock which protrudes, say, one inch above the surface. A little calculation will show that, if the wheel has a diameter of four feet, it must move forward to mount this obstacle about seven inches, and this distance it will move at its present rate in one-twentieth of a second. That is to say, the weight which this wheel sustains —one-quarter of a ton— must be raised in one-twentieth of a second one inch, — must be given with a sudden impulse, not gradually, a velocity of twenty inches a second. To overcome thus quickly the inertia of a quarter of a ton would require an enormous force, and the wheel, not to mention the draught animals, would receive a tremendous shock, which would be repeated when the wheel had passed the obstacle and the load fell back through this distance of an inch. The most strongly-built wagon would soon wear out, if subjected continually to hammering of this sort.

Now interpose a spring between the wheel and its load. The wheel itself will rise just as quickly as before, and it will require, of course, a considerable force to bend one inch a spring already weighted with a quarter of a ton, but nothing like what would be required to lift a dead weight of that amount. As for the load it takes its own time to move, and it has hardly begun to rise when the obstacle is passed and all is over. The load will probably rise less than an eighth of an inch during the operation. The springs, then, save the wagon in a great measure from the continued pounding to which it would, without them, be subjected. If the vehicle carries passengers, they, too, get the benefit of the easy riding; but it should be understood that springs are not entirely matters of luxury.

3. The penny is retained on your finger by its inertia. To start it to moving as quickly as the card has moved would require more force than can be applied to it merely through the strength of its adhesion to the card, due to its weight. The adhesion is great enough to enable you to move the penny if you will proceed slowly, giving the card a gentle push or pull and thus allowing the force time to act. But when you snip the card quickly the slight amount of force which, under the circumstances, you can apply to the penny, acts for too short a time to give it any perceptible motion. Hence, while the card is sent flying, the penny remains behind.

☞Answers to Problems 4, 5 and 6 are deferred to another month.

GEO. SENECA JONES.

WATER.—One cu. in. of distilled water at its maximum density, of 39.83 degs. barometer at 30″, weighs 252.6937 grains; it is 828.5 times heavier than atmosphere air.

A cu. ft. of water at 62° weighs 998.068 ounces, or 62.37925 lbs. avoirdupois. At the temperature of 212 degs. the weight of one cubic foot of water is 59.675 lbs. The weight of a cubic foot of ice at 32° is 57.25 lbs. Below the temperature of maximum density water increases in volume very slowly at first but more rapidly as the temperature of congelation is approached. In freezing, water expands .089 of its bulk, a little less than 1-11.

One cubic foot of water measures 7⅛ gal.—1,728 cu. in., and at the temperature of 62° weighs 62.4 lbs.

One gallon of water measures 231 cu. in., and at a temperature of 62° weighs 8⅓ pounds.

A column of water at 62° 2.31 ft.—27.72″—in height gives a pressure of one pound per sq. in. area. Height in feet multiplied by .433 equals pounds pressure.

32° F. is the freezing point of water at sea level.

39.1° F. is the point of maximum density of water.

62° F. is the British standard for specific gravity of water.

212° F. is the boiling point of water at sea level.—*Ex.*

QUESTION DEPARTMENT
OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

THE answers to SELF CULTURE questions for June will be found in Vol. XXIII., of the new Encyclopædia Britannica on the page indicated by the number which follows the question.

June 1. What is known regarding the authorship of "The Thousand and One Nights," a work more commonly known in English as "*The Arabian Nights' Entertainments*"? 316

June 2. When and by whom were the first serviceable telescopes made, and were they "reflectors" or "refractors"?
135, 139, 146. See also 1481 Supplement.

June 3. What economic considerations practically restrict the cultivation of the tea-plant to the countries whence it first became known to Europeans? 97

June 4. Where did Oriental carpet-weaving reach its greatest perfection of form and finish? 211

June 5. What are the facts in the case of Switzerland's hero, William Tell, immortalized by Schiller's stirring drama? 155

June 6. What principles underlie the accepted theories of taxation in civilized countries? 85

June 7. For what purpose was the military order, Knights Templars, founded, and what was their part in the valorous though fruitless efforts to hold Palestine against Mohammedan invasion? 160

June 8. When were thermometers (*i.e. heat-measurers*) first contrived, and what three scales are now in use? 288

June 9. Which of Thackeray's works is thought to exhibit, in its most felicitous aspects, a style which became a landmark in literature? 214

June 10. When and by whom was the use of tobacco first made known to Europeans? 423

June 11. What is the order of seniority of the principal old-world universities, and which of them have failed to maintain their prestige? 831

June 12. What is the history of early telegraphy, and what notable advances have been made since Morse's time? 112, 119

June 13. What geographical peculiarities of Thessaly (the theatre of the Greco-Turkish war) seem always to have influenced its history?
298 (for map see Vol. XI., p. 81).

June 14. What explanations have scientists offered of the rarer and more puzzling phenomena of thunder-storms? 329

June 15. What was the unusual method of self-education which gave Bayard Taylor an international reputation? 91

June 16. From what rude beginnings did the art of typography advance to the position of one of the world's greatest civilizers?
681, 685, 687

June 17. What estimate is the historian today constrained to place upon Talleyrand, now that so much light has been thrown on his methods and motives? 29

June 18. Where did tennis, the oldest of the ball-games, originate, and what regulations govern it? 179

June 19. What was the farthest northward point reached by the tide of Turkish conquest in Europe near the close of the sixteenth century, and what intervened to save Turkey three hundred years later, when a Russian army before Constantinople exacted the treaty of San Stefano? 640, 647

June 20. What had been done toward constructing a working telephone when Bell began the experiments which solved completely the problem of telephonic communication?
127. See also 1481 Supplement

June 21. What are the principal provisions of the Constitution of the United States? 745

June 22. Wherein did Solomon's celebrated temple differ from the structures which successively replaced it? 165

June 23. What appliances are used by taxidermists in mounting birds and animals so as to preserve a life-like appearance? 89

June 24. What confirmation is given to the legend of Troy by the excavations conducted by Schliemann and others? 577, 582

June 25. What is the origin of the more familiar titles of honor in distinguishing rank? 417

June 26. What were the associations which influenced, if they did not inspire, Tasso's beautiful epic poem, "Jerusalem Delivered"? 75

June 27. What varied uses of terra cotta work in ancient times are revealed by the specimens found at Tanagra and other places? 190

June 28. What sorts of torpedoes have been designed for use in naval warfare, and how are they operated? 449 and 1497 Supplement

June 29. To what extent do modern theatres copy after those in which the ancients held their splendid spectacular exhibitions? 222

June 30. Wherein is Titian's best work superior to that of any painter of his own or a later day? 413

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V JULY, 1897 No. 4

SIXTY YEARS OF SOCIAL CHANGE IN ENGLAND:

A VICTORIAN JUBILEE RETROSPECT

By SIR WALTER BESANT

INTRODUCTION*

WHEN Sydney Smith, towards the close of his life, considered the changes which had passed over the country within his recollection, he said that he wondered how the young men of his time had managed to preserve even a decent appearance of cheerfulness. Sydney Smith died in 1845, just at the beginning of those deeper and wider changes of which he suspected nothing, for, though he was a clear-headed man in many ways, he was no prophet—he saw the actual and the present, but was unable to feel the action of the invisible and potent forces which were creating a future to him terrible and almost impossible. Had he possessed the prophetic spirit he would have been another Jeremiah, for the destruction of the old forms of society, the levelling up and the levelling down destined to take place, would have been pain and grief intolerable to him.

I have always maintained that the eighteenth century lingered on in its ways, customs, and modes of thought until the commencement of Queen Victoria's reign, and I regard myself with a certain complacency as having been born on the fringe of that interesting period. I might also take pleasure in remembering that one who has lived through this reign has been an eye witness, a bystander, perhaps in some minute degree an assistant, during a revolution which has transformed this country completely, from every point of view; not only in manners and customs, but also in thought, in ideas, in standards, in the way of regarding this world, and in the way of considering the world to come. I do not, however, take much pleasure in this retrospect because the transition has taken place silently, without my knowledge; it escaped my notice while it went on; the world has changed before my eyes and I have not regarded the phenomenon, being

* The following chapters of this retrospect of the Social Changes that have occurred in England during the Victorian reign, are taken from a work specially written by the distinguished novelist and *littérateur*, Sir Walter Besant, for THE WERNER COMPANY, London, Berlin, Chicago and New York, and to be presently published by them under the title of "The Enchanted Island, or the Victorian Transformation." The work has been called forth by the interest manifested in the year of the Queen's "Diamond Jubilee," and affords many and striking illustrations of the social transformation that has come about in Britain since Her Majesty's accession, together with a number of instructive facts regarding the expansion of the Empire and the political, industrial and social amelioration of the people. The present instalment deals interestingly with the Transformation of the Professions and the Transformation of Woman in the past Sixty Years.—ED. S. C.

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busily occupied over my own little individual interests. I have been, indeed, like one who sits in a garden thinking and weaving stories, nor heeding while the shadows shift slowly across the lawns, while the hand of the dial moves on from morning to afternoon. I have been like such a one; and, like him, I have awakened to find that the air, the light, the sky, the sunshine have all changed, and that the day is well-nigh done.

I desire in this place, above all things, to interest an American audience. I have to depict for them a revolution of which they have probably heard little. It is nothing less than a transformation of the British Empire. There are, I understand, certain prejudices in the States as to the average Englishman. I desire to do something towards removing these prejudices without asking what they are. To be sure, other prejudices may perhaps take their place: I have no hope that we shall ever come to be regarded as angels. One might perhaps remark that as regards our national faults they may be observed as in a looking-glass, across the ocean. Putting aside this contention, I would plead that men at all times are liable to the defects of their qualities: given the latter, we may assume the former. However, I am not here retained for the defense. I shall only state the facts. Again, though I may be considered after all as a mere special pleader, I confess that my one object in writing these pages is to present my American readers with a new, an independent, and, if possible, an unprejudiced, consideration of England as it is, and not of England as it was in the eighteenth century: *i. e.*, down to the year 1837. I am convinced that a man can place before himself no nobler object than the removal of prejudice, if it exists, and the reconciliation—the word must be allowed—of the mighty Republic of the West with the British Islands and the four great nations of the future,—Canada, Australia, New Zealand, and South Africa. It may be that the leadership of the race may pass from London to Washington. It seems to me more likely that there will be no leadership at all, but that six independent peoples, all speaking the same language, all governed by the same institutions, all owning the same literature, will be united on terms of equality in an alliance offensive and defensive against the whole world. In either case the alliance should be acccompanied by no lingering prejudice, rancor, or animosity. We must endeavor to extinguish the smouldering ashes of revengeful memory once and for all.

Do not expect in these pages a Life of Queen Victoria. You have her public life in the events of her reign; of her private life I will speak in another chapter. But I can offer you no special, otherwise unattainable, information; there will be here no scandal of the Court. Indeed, in Her Majesty's Court, there is little or none of that to relate. I have climbed no back stairs; I have peeped through no keyhole; I have perused no secret correspondence; I have on this subject nothing to tell you but what you know already.

Again, do not look in these pages for a résumé of public events. You may find them in any Annual or Encyclopedia. What I propose to show you is the transformation of the people by the continual pressure and influence of legislation and of events of which no one suspected the far-reaching action. The greatest importance of public events is often seen, after the lapse of years, in their effect upon the character of the people. This view of the case, this transforming force of any new measure, seldom considered by statesman or by philosopher, because neither one nor the other has the prophetic gift, if it could be adequately considered while that measure is under discussion, would be stronger than any possible persuasion or any arguments of expediency, logic, or abstract justice.

I propose, therefore, to present a picture of the various social strata in 1837, and to show how the remarkable acts of British legislation, such as free trade, cheap newspapers, improved communications, together with such accidents as the discovery of gold in Australia, and of diamonds at the Cape, have altogether, one with the other, so completely changed the mind and the habits of the ordinary Englishman that he would not, could he see him, recognize his own grandfather. And I hope that this first sketch, devoted to the transformation of the professions and of women, may prove not only useful in the manner already indicated, but also interesting and fresh to the general reader.

W. B.

LONDON, Easter Sunday, 1897.

THE TRANSFORMATION OF THE PROFESSIONS*

SIXTY years ago there were three professions and two services. The two services were the Army and the Navy; the three professions were the Church, Law, and Medicine.

The Church was the natural home of the scholars; a few scholars drifted off into the Law; there were also a few in the House of Commons, where they made apt quotations from Horace, and delighted the members by giving a Virgilian turn to a debate. Now-a-days—alas!—were a scholar to venture on a Latin quotation, the House would not understand.

It is pleasant to look back upon the quiet, uneventful, peaceful life of the early Victorian scholar. He began at a public school where he needed no stimulus in the way of stripes; he devoured books; he acquired scholarship by a kind of intuition; he wrote Latin verses in which every hexameter had a Virgilian phrase and every pentameter reminded one of Ovid; he wrote Greek iambics more easily than the most rapid English poet ever composed blank verse; he thought in Latin; he made jokes in Greek. This boy gained, of course, a school scholarship and entered one of the colleges of Oxford or Cambridge. Here he obtained one of the college scholarships, perhaps, too, one of the University scholarships, and all the prizes that there were for Latin and Greek compositions, and at last took the highest degree possible in classical honors. This done, a fellowship was the next step. This place was worth about £300 sterling a year, with rooms, commons and dinner free. There were no duties attached; if he chose to take Orders and to remain unmarried, he might keep his fellowship for life. He did take Orders; he was appointed college lecturer in classics; he remained lecturer for ten years, when the tutor took a college living; he then succeeded to the tutorship, which was worth three or four thousand a year.

He then had two courses open to him. He might remain tutor long enough to amass a considerable fortune, and then take a college living and retire into the country, or he might wait on, presently retire, and either finish his days as a fellow, or be perhaps elected to the mastership, a post both dignified and well-endowed. By this time he had passed the period when most men desire to marry; he was settled in most excellent rooms; he had a free library; his habits were fixed; the college wine cellar was renowned; he was too comfortable to run the risk of change. Therefore he stayed where he was, within the walls of the old college, and younger men took the college livings. He never wrote anything to prove his own learning or to advance the learning of others; he produced nothing except a few Greek epigrams. And when at last he died, there was for a brief period a memory of one who had been among them, a great scholar; and then oblivion closed over him and he was gone. Such was the life of the Don. Sometimes he retired from the college and took the head mastership of a school; but not often.

All the clergy were not college Dons and great scholars. Yet there was always, at that period, a flavor of scholarship about them. The beneficed clergy of the country were generally younger sons of the country gentry, because almost every family had a church living in its gift, and these livings were too valuable to be bestowed out of the family. A young man who took a curacy in the country without family influence probably found himself, if he had no extraordinary gifts, stranded for life on eighty pounds a year. Those of the benefices which did not belong to private patrons were either in the gift of the lord chancellor, with whom interest was required, or belonged to the bishop, who had his own relations to provide for, or to some college at Oxford or Cambridge, which wanted them for its fellows. Of the sons, nephews and cousins, for instance, of Dr. Sparke, sometime bishop of Norwich, it was said of the nepotism which characterized that prelate, that preferment came to his relatives "as the *Sparkes* fly upwards."

The only chance for a young man was to attract attention as a preacher in some town. But this chance came to few; therefore for half the clergy, at least, their profession was a starveling. Yet those who had no interest entered it with hope, and under the pressure of a "call,"

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which they believed to be real and not to be disobeyed under penalties too awful to be contemplated. Meantime, it is now nearly fifty years since Charles Kingsley, who could never shake off the prejudices of small middle-class gentility, uttered the sneer that the modern way of making your son a gentleman was to send him to Oxford first and to put him in Holy Orders next. He here expressed, however, a common feeling about the clergy, which was that they should be scholars first, gentlemen next, and divines last. And there is no doubt that the social position of the Church, and, therefore, the adhesion of all the better classes to the Church, has proved of the greatest value, in times of religious decay, towards maintaining the Anglican ecclesiastical system in its position of ascendancy.

The administration of the parish was still that of the eighteenth century. That is to say, the Church was there, before all people, with open doors, offering its services, its sermons, its offices, freely to all who chose to accept them. It was not considered the business of the clergy to run after those who refused their offices. As for the piety and the reputation of the clergy, their lives were pure; there was commonly no scandal; they were supposed, however, to be addicted to wine; and in the city there were some who were known as "three bottle men." In opinions, the majority were of the Evangelical type, with Calvinistic leanings; they preached sermons wholly on points of doctrine; the general belief was that mere membership in the Church was of no importance at all; and that the salvation of the soul was an independent and separate transaction carried on between the individual and his Creator. This kind of preaching has not yet wholly ceased, but it is rare. Such preachers are no longer heeded.

Let us compare the Church of the present day. It is no longer a church of scholars; there are still some learned members in it; but the old presumption that a clergyman must be a scholar is quite lost and forgotten; rather the presumption is the other way, that a clergyman is not a scholar. The young scholars of the day do not, as a rule, take upon them Holy Orders; there are too many openings for their intellectual activities. Moreover, the prizes are not what they were. Agricultural depression has ruined the fellowships, cut down by one-half the country livings, destroyed the value of deaneries and canonries. The bishoprics still, however, keep their value, and a profession cannot be thought very poor which numbers so many prizes as the Church of England, with her archbishops and her bishops. Preaching, which was formerly so important a part of Church work, has decayed deplorably. The reason is the development of the parish work, which now occupies the whole time of the clergy, leaving them no time for meditation and study. For, since the people will not come to the clergy, the clergy condescend to stoop to the people.

At the present moment the Church is the centre of numberless institutions and associations which aim at civilizing the people rather than making them religious. The clergy preside over clubs for the lads, clubs for the girls, temperance associations, mothers' meetings, sales of clothing, lectures, concerts, care of the poor and of the sick, benefit societies, visiting organizations, Sunday Schools, country holiday funds, convalescent homes, and a thousand other things. Now the working people, and especially the very lowest class, regard this activity with a kind of admiring wonder; they see these young fellows — many of whom are not clergy, but live among them — working morning, noon and night for no reward; they are touched by this devotion; their lads would follow them to the death. I do not say that this example makes them religious, but it fills them with that new feeling towards religion which has been already considered. The doctrines held by the present clergy are in most cases High Church, with which, personally, I have no kind of sympathy. At the same time one must admit that the modern views have destroyed the dreadful terrors about Election and Predestination: in the Anglican, as in the Roman Church, once more the fold protects.

In Law and Medicine, fewer changes have been made. In the former a barrister was not allowed to make a friend of an attorney, or to take his hand, or to visit at his house. The low class attorney-at-law, of whom there were a great many, practised with impunity all kinds of iniquities and conspiracies; he was, indeed, an enemy to the human race; he

was usurer; he was the concoctor of civil actions which he dragged on interminably; it was he who filled the prisons with unfortunate prisoners; he robbed the widow and defrauded the fatherless; he took advantage of difficulties which he aggravated—he charged what he pleased. The power of the attorney—now called solicitor—for mischief is very greatly curtailed; a taxing-master looks after his bills; he can no longer clap a debtor into prison; he is liable to be struck off the rolls for misconduct.

In Medicine the physician never claimed so great a superiority over the surgeon. If he did, that superiority has vanished. Great are the recent triumphs of surgery; not so great, perhaps, as those of medicine. In those days the surgeon operated in the presence of the physician; he did not aspire to the medical degree; he could not be called "Doctor." There were no anæsthetics in those days; operations of all kinds were limited by the patient's power of endurance; a long operation killed, because there is a limit to the endurance of pain. The discoveries of the laboratory have placed the treatment of all disease on a new and more scientific footing. Fortunately I am not called upon in this place to do more than indicate changes that only a medical student could properly explain. We can, however, all understand the ward—clean and neat, with regulated temperature; the patients under the care of bright and cheerful nurses; the hospitals "walked" not by the young ruffians of the "Bob Sawyer" type, but by keen and eager students, with whom science is more than a mere profession, and the causes of diseases more than their cure.

Sixty years ago, I said, there were only three professions. How many are there now, recognized as on an equal footing of dignity and importance with these three?

Formerly, architecture was not considered a profession. I remember long ago, in the "Sixties," listening to a group of men who were discussing whether architecture had any claims at all to be a profession—certainly the local architect was also the house agent—and whether a gentleman could belong to it. I believe they agreed that it was only a trade.

Formerly, there was no profession of Science at all. At Cambridge there were chairs of mathematics, of chemistry, and of other branches. But there was no profession of any branch of science. No man set up a laboratory and said "I am chemist by profession;" there were none of the great schools for physical Science, such as now exist at Cambridge, at South Kensington, at Newcastle, and at other places; no young men began by "going in" for Science, as they do at present. That profession that offers the noblest prizes of fame and name, together with a sufficiency of income, has been created in all its numerous branches within the last sixty years. The British Association made the world familiar with the claims and the work of the new Science. Such men as Humphry Davy, Faraday, Darwin, Huxley, Tyndall, and so many others, who will be accounted the chief luminaries of this age, planted firmly the claims of Science in the minds of the people, and raised the position of Science to the same level as that of Latin and Greek scholarship. All these physicists, electricians, zoölogists, biologists, chemists, and the rest, have come into existence during the Queen's reign. The teaching of Science at our universities and schools, the multiplication of new colleges in all the Colonies as well as at home, have created places for these students and a demand for their teaching; they have also created a demand for new books, which only these teachers were able to supply.

Formerly, again, the position of teacher in a school, except when one was head master of Eton, Harrow, or Winchester, was one of curious contempt. The reason for this contempt was simple; it was the connection between a schoolmaster and his floggings. That connection has now ceased. At a few schools, the head master exercises the old business with the birch; it is regarded as a custom or a usage rendered venerable by antiquity. "I was swished," said a young fellow the other day, "nineteen times when I was at school. I have always regretted that I didn't make it twenty." But the assistant masters have no power of inflicting personal chastisement.

This old contempt has vanished; the profession is now regarded with great respect, and carries with it a proper amount of social consideration. No young man, formerly, who could by any

possibility get into any other line of life would take a place as assistant master even in a public school. If he did, it was in hopes of obtaining a school boarding house and making a rapid fortune. The position is now literally run after by young university men of the greatest distinction and the best credentials as to scholarship. The present head master of Harrow, writing to a newspaper some time ago, made this suggestive observation. I quote from memory: "I believe that I have at Harrow at this moment the best collection of assistants that were ever gathered together at any public school. Yet I am certain that if they were all to resign I could replace them very shortly by another collection equally good," so ready, so eager, are the young scholars of the day to become masters in the public schools. Sixty years ago they would have stayed on at Oxford or Cambridge, and led the life already described of the scholar, the fellow, and the college tutor.

Another new profession, though to the younger men it seems an old profession, is that of engineering. There are many branches of engineering. One constructs piers, jetties, railways, bridges, great works like the Forth Bridge, or smaller bridges, tunnels, roads, embankments, and the like. Another devises and constructs machinery of all kinds; another controls electricity; there must be an engineer in every factory as on every little steamer. Great prizes in money and fortune belong to this profession. It is eminently a learned profession; to attain any degree of eminence in it one must be a good mathematician.

Other new professions are those of the actuary and the accountant. And there are "followings" once not allowed to be professional — such as that of the painter and the sculptor, the work of literature, music, acting, etc. A young man may enter any one of these branches of mental achievement; he may choose his own department; he will occupy as good a social position as the young barrister — he will belong to the professional class. As for the prizes in some of them, if they are not equal to those of the Bar or the Church they are considerable. In some kinds of literature, such as educational books, fiction, and the drama, successful writers command incomes which would be considered incredible by Douglas Jerrold and the wits of the early Victorian era.

To recapitulate. Where there were three professions sixty years ago there are now dozens; given a young man of ability and activity, it is difficult not to find for him an opening where he will get a chance of gaining a splendid prize of success. For the man of exceptional ability, the Church leads him to a bishopric, with a life peerage and £10,000 a year; the Bar leads him to an income of £10,000 a year, and, if he pleases, a peerage; Medicine may give him £15,000 a year, also with a peerage, or a baronetcy, if he desires one; all the other professions have their splendid prizes and their magnificent chances which are open to a young man of ability. Compared with the condition of 1837, we are like the occupants of a broad expanse of country which has been suddenly widened in all directions by the removal of walls and fences and the abolition of prohibitions.

One thing remains with the new as with the old professions: they all demand an apprenticeship and a training. No one can enter the law or medicine or any other calling without being able to pay, over a period of five years, at least a thousand pounds, probably two thousand, when all is done. Until this condition is removed, which is not likely to happen, it is not true to say, or to think, that every career in this country is open to every boy.

THE TRANSFORMATION OF WOMAN *

LET me present to you, first, an early Victorian girl, born perhaps about the Waterloo year, next her grand-daughter, born, say, sixty years later.

The young lady of 1837 has been to a fashionable school; she has learned accomplishments, deportment, and dress. She is full of sentiment; there was an amazing amount of sentiment in the air about that time; she loves to talk and read about gallant knights, crusaders, and troubadours; she gently touches the guitar; her sentiment, or her little affectation, has touched her with a graceful

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melancholy, a becoming stoop, a sweet pensiveness. She loves the aristocracy, even although her home is in that part of London called Bloomsbury, whither the belted Earl cometh not, even though her papa goes into the city; she reads a good deal of poetry, especially those poems which deal with the affections, of which there are many at this time. On Sunday she goes to church religiously, and pensively, followed by a footman carrying her prayer-book and a long stick; she can play on the guitar and the piano a few easy pieces which she has learned. She knows a few words of French, which she produces at frequent intervals; as to history, geography, science, the condition of the people, her mind is an entire blank; she knows nothing of these things. Her conversation is commonplace, as her ideas are limited; she cannot reason on any subject whatever because of her ignorance, or, as she herself would say, because she is a woman. In her presence, and indeed in the presence of ladies generally, men talk trivialities. There was indeed a general belief that women were creatures incapable of argument, or of reason, or of connected thought. It was no use arguing about the matter. The Lord had made them so. Women, said the philosophers, cannot understand logic; they see things, if they do see them at all, by instinctive perception. This theory accounted for everything, for those cases when women undoubtedly did "see things." Also it fully justified people in withholding from women any kind of education worthy the name. A quite needless expense, you understand.

The girl who lived in Bloomsbury Square, or in the suburbs—say Clapham Common,—had in those days to make herself happy with slender and simple materials. There were few concerts; I think the "Philharmonic" was already in existence; oratorios were sometimes performed, but it was not every girl who liked what was then called classical music; the general cultivation of music was poor and meagre and within very narrow limits; people liked songs, it is true, especially pathetic songs. These, like the poetry of the "Keepsake" and "Friendship's Offering," mostly turned on the domestic affections. The young ladies recognized this sentiment, bought or copied those songs, and sang the most mournful of ditties. Everybody, in every class which respected itself and claimed gentility of any kind, talked about the Opera, to which the well-to-do young lady was taken once a year solemnly. This gave her the right for the rest of the year to talk about the *répertoire* and to speak with disrespect of the leading singers.

The theatre was very seldom visited; indeed, there were reasons why it was not desirable that young ladies should go to the theatre; if they did go it was an event very much discussed both before and after. There were only one or two theatres that respectable people could possibly attend, and the one part of the house where ladies could be seen was the dress circle. Now, in the "Thirties," if my information is correct, there were good actors, but the plays were monstrously bad. The Queen, however, used to like going to the theatre. If you walk down to those north of the Strand, you may see how the road was widened for her to go to the Adelphi melodramas.

The reading of girls was carefully selected for them; in serious circles—there were many circles in 1840 privileged to be serious—fiction was absolutely forbidden; its place was taken by religious biography; it is wonderful to think how large a part was played by religious biography about that time. I do not know what book besides these biographies and records of "conversation" were allowed, but I imagine that there were not many. At all events a young woman was not allowed to read anything which would suggest to her the wickedness of the world, the realities of the world, the truth about men and women, or the meanings of humanity. She was to leave her mother's nest not only innocent—girls do still leave their mothers in innocence,—but also in a state of ignorance, which was then mistaken for a state of grace. How far she really was ignorant no one but herself could tell; one imagines that there may have been some knowledge behind that demure countenance that was not generally suspected.

As for her accomplishments, they comprised, apart from the knowledge of a few pieces on the guitar and the piano, some slight power of sketching or flower-painting in water colors. Of course, it was nothing better than the amusement of an amateur. As for attempting literature, no one, with very, very few exceptions,

ever thought of it. There was then but a limited demand for women's literary work, a very limited demand; yet there had already been some very fine work done by women. Mrs. Ellis was writing those famous and immortal works of hers on the "Woman of England;" the "Mothers of England;" the "Wives of England;" the "Daughters of England," and, so far as I know, for the subject is inexhaustible, the "Housemaids of England." These essays, which I fear, dear reader, you have never seen, endeavored to mould women on the theory of recognized intellectual inferiority to man. She was considered beneath him in intellect as in physical strength; she was exhorted to defer to man; to acknowledge his superiority; not to show herself anxious to combat his opinions. At this very time, one woman at least—Harriet Martineau—was proving to the world that there were exceptions to the inferiority of the sex in matters of reason, while another woman, Marian Evans ("George Eliot"), already grown up, was shortly to enter the field with another illustration of the same remarkable fact.

It has been often charged against Thackeray that his good women were insipid. Thackeray, like most artists, could only draw the women of his own time; and at that time they were undoubtedly insipid. Men, I suppose, liked them so; liked them to be childishly ignorant, to carry shrinking modesty so far as to find the point of a shoe projecting beyond the folds of a frock indelicate, to confess that serious subjects were beyond a woman's grasp, never even to pretend to form an independent judgment; to know nothing of art, history, science, literature, politics, sociology, manners. Men liked these things; women yielded to please the men; their very ignorance formed a subject of laudable pride with the Englishwoman of the "Forties."

As for doing serious work, the girl of that period shrank appalled at the very thought. To earn one's livelihood was the deepest degradation; the most sincere pity was felt for those unhappy girls whose fathers died or failed, or left them unprovided for, so that they must needs do something. It was pity mingled with contempt. Even this meek and gentle maiden of the early Victorian period could feel, and could show, the emotion of contempt. Readers of "Cranford" will remember how the unfortunate lady opened a tea-shop; those ladies who were too old or too ignorant for teaching—"going out" as a governess—sometimes set up a "fancy" shop, where children's things, lace, embroideries, things in wool and pretty trifles, were sold. I remember such a shop kept by two gentlewomen, old, reduced, decayed; but they were very sad, always in the lowest depressions; I fear it was but a poor business. There were no professions open to women. Those who did not marry—they were comparatively few—stayed at home with one of the brothers, generally the eldest, and, as often as not, such an unmarried sister proved the angel of the house. Sometimes, to be sure, the lot was hard, and she was made to feel her dependence. In general, I like to believe, the single woman of the family, in whom all confided, in whom all trusted, the nurse of the sick, the contriver and designer of the girls' frocks, the maker of fine cakes and the owner of choice recipes, who knew all the branches of a numerous family, who kept together the brothers and cousins who would fly apart but for her, was as much valued as she deserved to be.

There were many ways of "going out" as a governess. The most miserable lot of all was considered—and no doubt was—to be a resident teacher in a girls' school. In this position there was no society of any kind; there was no chance of meeting young men; there was no pleasure; there was an enforced and unnatural pretense at virtue; there was no hope of change; no hope of happiness; no hope of love. There was not even any chance of making money. One might also become a visiting governess and undertake the children of a house for the day; this gave liberty for the evening. One might become a resident governess in a house; this exposed a girl to the insolence of the servants, the advances of the sons, the caprices or snubs of her employer: novels of thirty years ago are full of the downtrodden governess. One pities her because the position, even at the best, must have been vile. Indeed, I remember very well, the position was intolerable, because of snubs and slights. At the same time her employer complained that she was meek to exasperation, and resigned to a point which mad-

dened. I have known ladies who were quite carried away, they became speechless, in trying to tell of the meekness of a governess. Again, a girl might teach music if she knew any—a thankless task when the stupidities of the pupils were visited on the teacher. A woman was not allowed to teach dancing, for a most praiseworthy reason—you cannot teach dancing without showing more than the tips of the toes—half the foot perhaps—where, then, is feminine modesty? This accomplishment was therefore taught by a "professor," generally a man who had played in his youth some small part in the operatic ballet; he carried a little "kit" or small fiddle, with which he discoursed a scraping, watery kind of music, while his nimble feet showed the way, and his thin legs cut single or double capers, which the girls admired but naturally were not invited to imitate. Nor could a woman teach writing and arithmetic—I cannot possibly explain why; for some unknown reason these useful arts were always taught by men. Yet women could add up, women could write, even in the year 1840. One male teacher of arithmetic and penmanship I knew. He practised entirely in girls' schools. He was proud of his professions, which he mixed with those of divinity and law. He was full of innocuous jokes, and, so to speak, non-alcoholic stories. He died about twenty years ago, ruined, he told me, by the introduction of women into the profession.

I say, then, that in the year 1840, as far as I can remember, there was hardly a single occupation in which a gentlewoman could engage, except that of teaching. Miniature painting can hardly be called an exception, because it is given to so few to be painters. She could not lecture or speak in public. St. Paul's admonition to women, that they must not "chatter" in church, interpreted to forbid public speaking in church, was extended to every kind of public speaking. No woman so much as dreamed of speaking in public at this time. Later on, a Mrs. Clara Balfour astonished people by lecturing in literary institutes. I believe she was the first. I remember hearing her lecture. The people sat with gloomy faces, and when they came away they shook their heads. "Irregular, my dear Madam." "Sir, it is irreligious." "Madam, it was an unfeminine and revolting exhibition." These comments were heard on the stairs. This system of artificial restraints certainly produced faithful wives, gentle mothers, loving sisters, able housewives. God forbid that we should say otherwise, but it is certain that the intellectual attainments of women were then what we should call contemptible, and the range of subjects of which they knew anything was absurdly narrow and limited. I detect the woman of 1840 in the character of Mrs. Clive Newcome, and indeed, in Mrs. George Osborne, and in other familiar characters of Thackeray.

Of society in 1840, let me speak only of the wealthier city class—the people who lived in big houses in Bloomsbury or in the suburbs. They had "evenings" with a little music; they were very decorous; the young men stood round the wall or in the doorways; the little music included those songs of the affections already mentioned; there was a little refreshment handed about, or set out in the dining-room. It consisted of sandwiches, cake, and negus. Sometimes there was a dinner party. The company were invited for half past six; the dinner, always the same, or nearly the same, consisted of salmon cutlets, haunch of mutton, boiled fowl and tongue, birds of some kind, and pudding of one or two kinds. The dishes were put on the table; everybody helped each other; nobody drank anything until the host had first taken wine with him; there was nothing to drink at dinner except sherry. After dinner the port went round once; the ladies retired; this was about half past seven or a quarter to eight; the men then closed up; fresh decanters were placed on the table and they drank port steadily till half past ten,—*i. e.*, for three long hours. Then they went upstairs to the drawing room; and, as if the port was not enough, they then had brandy and water, hot.

I have spoken of the wealthier class, but there was, and there is still, an immense number of girls belonging to the ranks where care and thrift were necessary in all things. In this class the unfortunate girls were slaves to the needle. All day and all the evening they were engaged in making and mending and darning. Families were large; there were little children and big boys; and the pile of linen and of stockings waiting

to be mended seemed never to grow less, while the pile of things that has to be made grew steadily greater.

A generation that has grown up with a sewing machine cannot understand this slavery. Think of this machine which sews up a length of three feet in a minute and of the time that was formerly required to do the same work by hand! It is not too much to say that the sewing machine set free millions of girls. What they are doing with their freedom is considered in the next few pages.

It was, at the best, an artificial and unnatural life; there was something oriental in the seclusion of women in the home and their exclusion from active and practical life; it led to many a rude awakening, many a shattered idol, many a blow which embittered the rest of life.

I must not forget, in considering the Englishwoman of 1840, her extraordinary cowardice; it was impressed upon her from childhood that she was a poor, weak creature; that she needed protection, even in broad daylight. Therefore, when a young lady of fortune went abroad, unless she drove in her carriage, she had a hulking footman walking behind her. If she was not a lady of fortune, she was escorted by a maid; she could go nowhere by herself; she saw danger at every corner, and was ready to scream at meeting a strange man in the open street. Nor must we forget her little affectations. She could not help them; they were part of her education. For instance, it was a very common affectation with girls that they could not eat anything at all, such was their extraordinary delicacy and elevation above the common mortal. So they sat at dinner with a morsel upon their plates which they left untouched; some girls made up for this privation by a valiant lunch; some habitually lived low and practised, though in no religious spirit, abstemious austerities. I think, however, that the girl who wished to be thought consumptive, cultivated a hectic bloom, and coughed, and fainted, carried affectation perhaps too far.

Such was the woman of 1840; in London, among the richer sort, a gentle doll, often good and affectionate; unselfish and devoted; religious, charitable, tenderhearted; sometimes, through the shutting up of all the channels for intellectual activity, snappish, impatient, and shrewish; in the country, in addition to these qualities, a housewife of the very first order.

Let us turn to the Englishwoman—the young Englishwoman—of 1897. She is educated. Whatsoever things are taught to the young man are taught to the young woman; the keys of knowledge are given to her; she gathers of the famous tree; if she wants to explore the wickedness of the world she can do so, for it is all in the books. The secrets of nature are not closed to her; she can learn the structure of the body if she wishes; the secrets of science are all open to her if she cares to study them.

At school, at college, she studies just as the young man studies, but harder and with greater concentration; she has proved her ability in the Honor Tripos of every branch; she has beaten the Senior Wrangler in mathematics; she has taken a "first-class" in classics, in history, in science, in languages. She has proved—not that she is man's equal in intellect, though she claims so much, because she has not yet advanced any branch of learning or science one single step—but she has proved her capacity to take her place beside the young men who are the flower of their generation, the young men who stand in the first class in honors when they take their degree. It is from such young men that our best statesmen, our judges, our ablest lawyers, our historians, our scholars, our divines, are taken—and among them the young Englishwomen of the day stand *inter pares*.

She has invaded the professions. She cannot become a priest because the Oriental prejudice against women still prevails, so that women in High Church places are not allowed to sing in the choir, or to play the organ, not to speak of preaching. For some reason or other, women have never written nobly on religion. They have written powerful religious novels, but there has never been among them a Dean Stanley or a Hooker. Nay, more; I have never heard of a woman carrying her classical studies into the ecclesiastical domain; and unless one is a scholar it seems impossible to write nobly of religion. In the same way she cannot enter the law, because the portals of the law are closed in her face by the Inns of Court, which will not allow her to become a barrister; and by the Law Institute,

which will not allow her to become a solicitor.

Some day she will get over these restrictions, but not yet. For a long time she was kept out of medicine. That restriction is now removed; she can and she does practise as a physician or a surgeon, generally the former. I believe that she has shown in this profession, as in her university studies, she can stand *inter pares*—among her equals and her peers, not her superiors. There is no branch of literature in which women have not distinguished themselves—none, it is true, in which they have attained the same distinction as a few men—a very few men; but among those called the foremost in their generation woman stands their equal. In music they compose, but not greatly; they play and they sing divinely. The acting of the best among them is equal to that of any living man; they have become journalists, in some cases of very remarkable ability; in fact, there are thousands of women who now make their livelihood by writing in all its branches.

There are artists of all kinds, oil painters, water color painters, black and white artists, sculptors, workers in pastel, carvers,—in a word, every art that exists is practised successfully by women. As for the less common professions, the accountants, architects, actuaries, agents, they are rapidly being taken over by women.

It is no longer a question of necessity; women do not ask themselves whether they must earn their own bread or live a life of dependence; necessity or no necessity they demand work, with independence and personal liberty. Whether they will take upon themselves the duties and responsibilities of marriage, they postpone for further consideration. I believe that, although in the first eager running there are many who profess to despise marriage, the voice of Nature and the instinctive yearning for love will prevail.

Personal independence—that is the key note of the situation. Mothers no longer attempt the old control over their daughters; they would find it impossible. The girls go off by themselves on their bicycles; they go about as they please; they neither compromise themselves nor get talked about; for the first time in man's history it is regarded as a right and proper thing to trust a girl as a boy insists upon being trusted. Out of this personal freedom will come, I dare say, a change in the old feelings of young man to maiden. He will not see in her a frail tender plant which must be protected from cold winds; she can protect herself perfectly well; he will not see in her any longer a creature of sweet emotions and pure aspirations, coupled with a complete ignorance of the world, because she already knows all that she wants to know.

Nor will he see in her a companion whose mind is a blank and whose conversation is insipid, because she already knows as much as he knows himself. Nor, again, will he see in her a housewife whose whole time will be occupied in superintending servants, or in making, brewing, confecting things with her own hand. For the young woman of the present day can make nothing; she cannot make her own dresses; she cannot trim her hat; she cannot cook; she cannot compound things delectable; the rolling pin she knows nothing about or the pastry board. Love will be changed, indeed. Will man and woman be of the same stature and of the same strength? I think not: there will always be the same differences in kind, but not so great in degree; the man will always look upon the world from his own point of view, the woman from hers. And these are never the same. Perhaps the greatest change is, that woman now does thoroughly what before she only did as an amateur. I have said that she cannot make her own dresses. That is true, as a general rule; but the woman who can, does so professionally and thoroughly; and the woman who sews now, sews more beautifully, turning out work equal to that of her ancestress, the Anglo-Saxon lady. So, also, if a girl takes up painting, she "goes through the mill;" she studies it in earnest—she studies it as a man would. And so with everything: the shallow amateurist is a creature of the past; women are thorough; women are professional.

I have spoken of certain little affectations of sixty years ago. These have vanished. The Englishwoman of to-day enjoys an excellent appetite, and tackles her dinner valiantly; she has not yet learned to be critical over the dishes or over the wine; that will doubtless arrive. As for pretending to be hectic or consumptive, she would scorn such a shallow

mockery; her desire, on the other hand, is to appear strong and healthy.

There have been certain losses in this development. For instance, there has appeared among us, for the first time in the history of woman, the girl who does not care about her personal appearance. She wears uncompromising spectacles, instead of a dainty *pince-nez;* she cuts her hair short; she wears a jacket all angles; there is no roundness in her figure; there is no sweet look of Venus in her face. Now even on the philosophic countenance of Hypatia men loved to discern that sweet and gracious look of Venus which made her philosophy palatable and her lectures tolerable. Fortunately, this girl is as yet very scarce. Generally, it is whispered, there are certain sufficient reasons for her indifference to dress; and it has even been remarked of her that if she did not study and do her best to uglify herself, it would still be impossible, by any arrangement of hair or costume, for her to beautify herself.

W. BESANT.

NEWSPAPERS IN THE UNITED STATES*

THEIR FUNCTIONS, INTERIOR ECONOMY, AND MANAGEMENT

THE important field now occupied by the newspaper in all civilized countries, and its eagerly accepted uses in the multitudinous forms and interests in which it appears, suggest material for an article on the subject which the writer hopes will not be without some measure of practical utility and perhaps instruction. Periodicals devoted to the dissemination of news in its various forms are more properly called newspapers, as they publish the most important happenings with or without comment in the various business callings, and in financial, professional, social and religious life. They also include in their columns advertisements of the various articles of trade and commerce of the country in which they are published, as well as many from foreign parts. The great "art of journalism" is to be first in obtaining legitimate news, first in accuracy and in the fairness in which it is set forth, and first in securing the freshest, brightest and most picturesque features for the general reader. These are some of the requirements of the modern newspaper. There should be, in addition to this, a sound moral force underlying all the editorial comment,—a force that first and above all is American, believes in our institutions, is in favor of our Constitution and the Declaration of Independence, and that never forgets that the flag of the Republic must ever be regarded as the symbol of a government that has for its fundamental principles equality, fraternity and liberty.

It is only within a comparatively few years that practically all our people read newspapers. But a decade or so ago it was considered a luxury not to be indulged to subscribe for a daily paper, except in cities and large towns. Newspapers were then for the classes, and the classes that habitually read daily prints were people chiefly interested in the large affairs of life—in the dignified, the cultured, the moral and the æsthetic side of life. It was then not only easy for the newspapers to observe all the proprieties and exclude everything that savored of sensation, but it was necessary for them to do so.

It is different now. Newspapers have spread over the whole world. Everybody reads them. Where one copy was sold a quarter of a century ago, thousands now go out among the people. No one is too poor, none live too remote, to "take in" a daily newspaper. They will now be made for the masses instead of for the classes, and in their make-up they must be made as the masses want them.

A newspaper must stand for something;† if it stands for business alone, the world will know it; if it stands for character and principle, for purity in public and private life, for honesty and fairness in our relations with our fellow-men, the newspaper is an educating power for good in all that makes men and women better. If a newspaper stands for noth-

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† For the origin and early history of Newspapers, see the extended article on the subject, in the Encyclopædia Britannica, Vol. XVII, pp. 412–437.

ing but success, gained at whatever cost, its influence as an educator will be *nil*. If an editor is indifferent to wholesome public opinion, or as to whether or not the world grows better, his newspaper will reflect that spirit. If he has faith in humanity, in the power of human love to make this life look bright and cheerful, unconsciously he will mould his editorial words to deepen and broaden that faith.

Primarily, the publication of a newspaper is a business enterprise. The world recognizes and applauds success. Self-preservation requires that the editor and his family shall be fed and clothed, and comfort and happiness must come in this way. But there are successful newspapers — in the conduct of which sensation is held to be enterprise — which no one wishes to admit to his home.

American newspapers are improving. The number of those which resort more to argument and less to vilification and abuse is increasing. As intelligence becomes more widespread, the moral character of American newspapers is bound to improve. The most influential newspaper in any American field to-day is the one that is run upon the highest intellectual and moral plane, the one that uses the best sense and the best morals. Gradually the paper that is guided by no moral or political principle is loosing its hold. It is dropping to the rear. The best paper in every field — the paper with a moral purpose — is forging ahead and leaving the time-serving, characterless sheet in the rear, where it of right belongs.

There is but one other desideratum of a perfect newspaper, and that is, that it should give all the news. To do this the news journal must also contain advertisments. These are news, the freshest, the most constantly varied, often practically the most interesting, news of all. Without advertisments successful newspapers would be impossible, and they would cease to appear. By their agency all can learn where best and cheapest to supply their wants, and by advertisements all can make their wants known. It is the task of the journalist to furnish his readers with a paper which shall perform the double function of narrating the story of the world from day to day, and of epitomizing commercial or political information. To render his paper an acceptable medium to the public who want to sell or to buy, the journalist must offer the advantage of an extensive circulation. To obtain this circulation he must provide the news-seeking public with the freshest and fullest information gathered from every corner of the earth. The gathering and publishing of news is an expensive process, but for this the advertising columns furnish the "sinews of war." The first-class newspaper attracts the first-class advertisements; the advertisements, in a large measure, enable the publisher to create and maintain the first-class newspaper.

The methods of gathering news for the great commercial dailies or the country weeklies vary only in degree. The publications of the larger cities require a corps of writers, whose duty it is to cover all departments of news that may be of interest to the reading public. The possibilities, therefore, of city journalism are almost unlimited; while in the smaller cities the opportunities for enterprise are somewhat restricted.

In the making of a metropolitan daily there are certain positions which are allotted to specialists, and these, in a measure, become for the time being fixtures on the papers with which they are identified. The person upon whom supreme responsibility rests in a daily newspaper office is generally known as the editor-in-chief. He represents directly the publisher or the proprietors of the newspaper more than does any other individual on the staff. It is his duty to see that the paper conforms to the general policy decided upon by the owners of the journal and that the proper persons are employed to give effect to that policy. Next in importance is the managing-editor, upon whom the real labor of getting out a newspaper devolves. He has the selection, in almost all cases, of the staff *personnel*, of editorial writers, city editor, exchange editor, and the many other assistants, which vary considerably in different newspaper offices. It is customary, among the larger metropolitan dailies, to hold daily conferences, during which the views of the more important representatives of the paper are presented, public matters discussed, and a general policy outlined, which then is followed out as nearly as possible by the subordinates.

The city editor is vested with the con-

trol of the "local" or city staff — reporters who gather and write what is known as "the local news," which includes nearly everything that is printed in the paper that does not come by telegraph or appear on the editorial page. These reporters are given definite assignments throughout the day, and go from their respective offices with a fixed object to accomplish, and are not sent out on a roving commission to see what they can find, as is popularly supposed. The work of gathering city news has been simplified greatly during the last fifteen years by the establishment of local city press associations, to cover what is known as routine news, *i. e.*, the courts, police, hospitals and other headquarters sources, where news is to be obtained daily by keeping a close watch on public affairs and awaiting new developments. On important papers there is a day as well as a night city editor. There are office men also to read copy, prepare headings, and keep a record or schedule.

Reportorial work is divided according to the sum or extent of the news going. The city editor enters on his assignment book, days and, it may be, weeks in advance, all regular meetings of civic bodies, clubs and organizations of which he can obtain knowledge, and deputes reporters to attend to them. The court reporters spend the day at the courts, prepare the records and chronicle all cases of importance. Men are detailed specially for trials, for the city council, the county or school board and other municipal centres. One man attends to all routine railroad matters, another to the lake, river or ocean marine.

The telegraph editor on a newspaper has the responsibility of caring for all of the news matter which comes over the wires into the newspaper office, whether it be from press associations or from special correspondents throughout the country. These special correspondents represent the newspaper with which they are identified in the cities in which they live, and are paid, in most instances, for the amount of news they furnish from week to week or from month to month. In cases of news of great importance, it is customary for newspapers to send special representatives from headquarters to other cities, who make a report for their individual paper of the event which has been assigned to them. This may be a cyclone horror, a national convention, a great fire in another city, a railroad wreck, a political gathering, or possibly for the purpose of getting more complete details on some subject which the particular paper upon which the correspondent is engaged is interested.

Of other departments of a newspaper, the more important not yet mentioned are those of the exchange and news editors. The exchange editor is generally a man of considerable experience, and his work is to select from the "exchanges" all kinds of matter for use by the various departments. He clips sporting, horse, base-ball, and similar notes for the sporting editor; notices of change of pastorates for the religious column; musical and dramatic gossip; short stories; matters relating to local celebrities; important news items of which only brief mention has been made in the telegraph columns, etc. The news editor takes care of news items, and in most cases has control of the out-of-town correspondents. Most newspapers make a feature of treating exhaustively sporting matters in their various forms, the drama, household affairs, insurance and banking, trade and financial reviews, and real estate items. These subjects are handled by specialists, who devote a large portion of their time to familiarizing themselves with the news features of their particular departments. There is usually a musical and dramatic and generally a literary critic on nearly all newspapers, and on some a religious editor is maintained, while the doings of secret societies and benevolent organizations form a department of many of them, and others make a specialty of reporting labor movements.

Once the news of the day has been gathered into the newspaper office, in various forms, the process of editing then begins. This work is done by professionals, who are experts in preparing "copy" for the printer. The copy thus prepared is then turned over to the foreman of the composing-room, whose duty it is to see that the manuscript which comes into his hands is put into type; and this, after proofs have been taken, is carefully read by proof-readers, who compare the proofs of the compositors' work with the original manuscript, and mark for correction any errors that may be discovered in the process of type-setting.

This being accomplished, the corrected type is then placed in "galleys" and taken to an imposing-stone, where, it is deposited. It is then ready for "making-up" into the form in which it will appear in the newspaper. In this work of "making-up," all matter relating to the different departments is kept separate; and, when the work of arranging the type is completed, the pages are then full and are "locked up" ready for the forms to be sent to the sterotyping-room.

Great improvement has of recent years been effected in the process of duplicating the types, so that it is not necessary to print newspapers direct from the type. Instead, *papier-mâché* matrices are now made, which serve as moulds and from these a casting is made in exact duplicate of the original type; from this casting the newspaper is printed. These metal plates can be duplicated in quantities, and thus a large edition can be run from extra sets, so that within a short time from fifty to one hundred thousand copies of a newspaper may be printed and got ready for distribution through the various channels through which newspapers are circulated.

In the mechanical make-up of the modern newspaper much saving in the cost of production has been made by the recent adoption of type-setting machines, which reduce the cost of composition about fifty per cent. These machines are rapidly taking the place of hand-labor, especially in the larger cities. Some opposition on the part of labor-unions followed their initial introduction; but this has been removed by a rule which requires the machine-operators to become members of the typographical unions in the cities in which the operators work, and by the adoption of a fixed scale of prices.

Newspapers are circulated through the mails as second-class mail matter, and postage is charged at the rate of one cent a pound. Under the present postal regulations, however, copies of a publication issued less frequently than once a week, addressed to a person residing in the city in which it is published, must be prepaid by stamps, at the rate of a cent for four ounces, or four cents a pound. The weeklies and dailies go through the mails at a regular pound rate without the affixing of stamps, bills being rendered by the postal authorities and settlements made weekly or monthly, according to the frequency of the publication.

Newspapers frequently vary in size (*i. e.*, in number of pages) from day to day, according to the volume of news and the pressure of advertisers for space. It is the common custom to adjust the size of a newspaper to meet the requirements of the advertising columns, and when the advertising patronage is light the size of the newspaper is reduced in accordance and the news made to suit these conditions, unless news matters of unusual importance are before the public, in which event the question of the advertising patronage cuts little or no figure with the publisher or editor of the paper. In addition to the regular issues, many newspapers, especially those issued in the evening, get out "extras," in which the more important and later news features are displayed prominently, and which, in many cases, have a large sale; especially is this so where some event of unusual importance is chronicled. In addition to these extras, many newspapers have special editions, some to emphasize the importance to their readers, and those whom they seek to become such, of their particular paper and its desire to cater to the reader's special wants.

Illustrations now form a most important part in the make-up of a modern newspaper. While there are a great many publications which do not use cuts to illustrate their news and other features, the majority of them do so, and the number is increasing rapidly. Some newspapers do not go beyond the use of portraits of prominent personages; others illustrate every article wherever possible. These illustrations are made by what is known as the zinc-etching process, the original of the picture being drawn with pen and ink and reproduced by photography on glass and then transferred to metal. Chalk-plates, formerly in common use, are but little used now.

The growth of the Sunday newspaper has been rapid during recent years, and has reached mammoth proportions. It is not an unusual occurrence for a metropolitan daily to issue more than fifty pages on Sunday. The publication and rapid growth of these Sunday newspapers has brought some antagonism from the religious element, which have declared that the Sunday papers "rob the em-

ployees of newspaper offices of their Sunday rest." It is a fact, however, that the work of preparing a Sunday newspaper begins early in the week, and is almost finished when Sunday dawns. The effect of the circulation of newspapers on Sunday is quite another matter, and one which can be defended less successfully.

Another important change in the making of newspapers has been the recent reduction in price. Practically, the day of the three-cent newspaper is past, one cent being the prevailing price now charged for morning and evening papers. This change has already taken its course westward, until now the Pacific Slope has been reached and penny newspapers are increasing rapidly in California, where a few years ago no coin whatever of less value than five cents was in circulation.

The country newspaper of to-day is vastly superior to that of a few years ago, on account of the introduction of what is known as "plate-matter" and "patent insides." The former is prepared in large cities by concerns generally known as newspaper unions, that make a business of editing and compiling late news matter from the metropolitan dailies, putting it into plate form, column width, and forwarding the plates to their various subscribers, who are generally publishers of papers of small circulation. These plates, when received, are arranged according to the peculiarities and make-up of the particular journals receiving them, and are used in lieu of type set at the place of publication. "Patent insides," so-called, are sheets printed on one side only, local matter being set and printed at the office of publication. By this method of securing news small country publishers are enabled to have the benefit of the exchanges of the world, and at a less expense than the composition alone would amount to if prepared in their own offices.

The rapid growth and phenomenal success of a number of American newspapers has caused many of them to invest their surplus capital in handsome fireproof buildings, which in most cases are used for general office purposes, as well as for the home of the newspaper. These huge structures in many cases represent the highest skill in the builder's art, and are a desirable addition to the architectural beauties of the cities in which they are located. Among the more prominent of these buildings are the New York "Herald," "Times," "World," "Tribune," "Mail and Express," Washington "Post," Chicago "Herald," St. Paul "Globe," San Francisco "Chronicle," Seattle "Post-Intelligencer," and Portland "Oregonian."

What is known as the "business office" of a newspaper is that portion of the publication which has more directly to do with the actual issue of the journal. In each newspaper office there is what is generally known as a "business manager," whose duty it is to make contracts with advertisers, purchase the necessary supplies with which to publish the newspaper, see that proper accounts are kept, including records of the circulation, etc., and that the employees are paid their salaries. While the two departments, business and editorial, of a newspaper, are working to the same end, *i. e.*, the successful publication of a newspaper according to the ideas of the owners, they are sometimes in conflict, and not infrequently the cause of more or less contention as to the individual rights of each; but probably no more so than occurs in other large establishments devoted to mercantile pursuits.

Another form of supplying reading-matter to American newspapers is by the syndicate system. The persons conducting these syndicates make arrangements with authors and specialists in certain lines for signed articles. These are resold to the newspapers — one only in a city — and generally are published simultaneously. By this plan one paper in each city is often able to secure an article of unusual merit, and from the pen of an eminent writer, at a nominal figure, sometimes as low as one dollar and a half a column, whereas, if they contracted directly with the author, they would be compelled to pay many times the cost. By selling the same article to different newspapers, a large profit is made in this way by the newspaper syndicates, which are growing in number and importance. Some writers syndicate their work direct without the aid of the middleman.

The aggressiveness of some newspapers has caused a frequency of libel suits, out of which has grown various libel laws, good, bad, and indifferent. The frequent attempts of lawmakers to "muzzle the press" have not met with the success of former days; and although

the efforts of the class most interested in curbing the spirit of the press and curtailing its liberties are not less frequent on account of failure, they are getting perceptibly weaker and shorter in scope. Of course there are instances — and no one regrets the fact more than the newspaper men themselves — in which flagrant violations of good sense in printing the news occurs; but these exceptions are not common, and the spirit in which they are met and denounced by other newspapers generally suffices to prevent their recurrence.

Efforts have been made, from time to time, to adopt the custom of affixing the signature of the writers who contribute to the daily press, but no great success has been attained in this direction, except in occasional instances. Signed articles have, however, had a tendency to secure for the publisher critical and technically accurate contributions from specialists, which are deemed more able and worthy of attention than those supplied by the average editor, who is an expert in no profession, and yet must write of them all. It is hardly possible that the system of signed articles, even if adopted, will be carried so far that the publisher may avoid the responsibility for libel suits for the statements made in signed articles; and yet this has been discussed as a possibility. While the plan has many advantages, as well as drawbacks, the signed article in the newspaper is becoming more and more common, and marks another departure in modern journalism; and in so far as it secures better and more careful — that is to say, more responsible — work, it is to be commended.

Newspaper writers are now appraised according to their merits, and the measure is taken very swiftly, whether the individual be man or woman. Women are succeeding, and have succeeded, in every branch of journalism, from the mere setting of the type to the absolute control of a great publication. Men as a class are apt to employ slang, colloquialisms, technical phrases and business language. Women, on the other hand, seldom fall into these errors, but sin on the side of florid rhetoric and so-called "fine writing." They have a natural inclination towards qualifying things that they like with pet words: a girl is always "pretty" or "charming;" a gown "elegant" or "lovely;" a book "delightful" or "splendid." As between the two faults, the woman's is less objectionable. Few newspaper women care to report fights, accidents, or other facts involving shame, suffering or disgrace; men, on the other hand, have a natural aversion to spending much time upon details. They are much quicker, however, to perceive news and to secure it. The practice known as "faking," or getting up tricky or worthless schemes, is not uncommon with newspaper men, but is very rare with newspaper women. The feeling between the two sexes is usually friendly, each recognizing where the other can do better work. The great increase of newspaper women is due, not to any competition between men and women, but to the fact that the development of the modern newspaper necessitates the gathering of news where women are more qualified to act than men.

This kind of news includes the description of social events, interviews with distinguished women, accounts of women's clubs and their doings, women's colleges, women's industries, and women's work in art, literature, and music. A few of the larger dailies have women employed as editorial writers, and in one or two instances they have attained remarkable success in this line of work, although the tendency of their thoughts and inclinations is generally to lighter veins.

Attempts have been made from time to time to establish schools of journalism, but without signal success. Joseph Medill, the distinguished editor of the Chicago "Tribune," has said: "You will not go far astray if you lay down as your major postulate that the real journalist, like the real poet, must be born, and cannot be made by art." Very few of the more prominent newspaper editors are believers in schools of journalism, and think that it would be a mistake to establish them in connection with universities and colleges. It has been well said by Colonel Charles H. Jones, of St. Louis: "That man is best equipped for the work of journalism who knows most of what is taught in all the schools. The best education for a journalist is the mental training which he gets from the widest possible range of studies in the colleges or universities — I mean the widest range of studies that he can really master; and after he has equipped himself

with all the knowledge that can be obtained from this general curriculum, he will find it necessary, as soon as he begins the practical work of journalism, to widen his knowledge and enlarge his range of information in all possible ways."

To be a successful journalist, a man must have what is technically known in the profession as "a nose for news." Without this he cannot succeed with the best education that it is possible to give him.

Friendship for newspaper men and cordiality in contact with them have long been deemed essential to the success of the individual who follows a public career. Chauncey M. Depew is a notable example of the class of men who are most accessible to reporters. It is said that Mr. Depew sees more newspaper men, and oftener, than any other recognized prominent person in the metropolis of New York; they breakfast, dine, and sup with him, or rather, that is what it amounts to. He has been called "the reporter's best friend." Russell Sage was formerly as accessible to the reporters and the general public as is Dr. Depew, but since the Norcross incident, has been of a more exclusive and retiring disposition.

Incomes of newspapers are difficult to get at. Vast fortunes have been made and lost in the launching of newspapers; as much as half a million dollars have been expended within the space of a year or two in the building-up of a newspaper which after all has proved a failure, while much less sums, judiciously expended, have produced publications which have been successful from the start, and in many instances have brought their founders immense fortunes in a few years. The general impression is, that most of the income of newspapers is from advertising; but according to the recent census the revenue is about equally balanced. The census figures are as follows:

From advertising, $71,243,087; from circulation, $72,343,361; the slight difference being in favor of the subscribers. The number of copies of newspapers printed during a year in the United States has reached the marvellous total of 4,681,113,530, and this is an increase of 2,600,000,000 over the figures obtained by the census of 1880. In the six years since the eleventh census was taken, the increase continued, and it is safe to say that the total of six thousand million has been passed. It is impossible to grasp all that this means. Perhaps the best illustration is, that if one person were invested with enough life, and were to give twelve hours a day to constant reading, he would be five or six thousand years old before he got through reading the papers and periodicals printed in the United States in a single year.

From a table recently compiled is seen that during the year 1896 there were 20,630 publications of various kinds issued in this country. This is only 235 greater than was the issue for 1895. Dailies increased about seven per cent., triweeklies nearly ten per cent. and semi-weeklies nearly twenty per cent. There was some slight increase in the number of bi-weeklies, semi-monthlies, monthlies and bi-monthlies. Quarterlies, semi-quarterlies and tri-monthlies fell off in number, and for the first time in nearly thirty years the number of weekly papers was smaller than for the preceding year. This decrease is due to the inroads which the cheap daily papers are making.

To give their readers all the news of the world, the great newspapers of the United States now rely upon special news-gatherers in every news-centre of the globe. Many of the noted journalists of the country are connected with these agencies, which distribute vast quantities of news to American papers. The phenomenal progress and the success of the American newspaper can, in a large measure, be attributed to the methods of these news-gathering agencies, foremost among which is the "Associated Press." Its close identification with American newspaperdom for the past decade or more, and its history, are in a large measure the history of journalism in America. Without these news-gathering aids it would not be possible, even in this day of rapid news-distribution, with the mechanical perfection that has been attained in this profession, to print as complete newspapers from day to day as are now to be found in all large cities. A glance, therefore, at the inception and growth of the Associated Press should be of interest to those who desire a more complete knowledge of American newspapers, and especially of their development.

Between the years 1835 and 1840,

and before the Atlantic cable and telegraph were in use, the New York papers established "pony expresses" and similar means to get the news from Washington, which was then, as now, a great news-centre. They also established a line of small, fast-sailing boats to run out and meet the incoming foreign sailing vessels. Then when the telegraph came into use they enlarged that field somewhat. The New York papers rather monopolized this news-gathering feature of the business in the beginning. The New York "Herald," New York "Sun," Philadelphia "Public Ledger" and Baltimore "Sun" all were established about the same time — 1835. The Philadelphia "Public Ledger" was established by men who left the New York "Sun;" so was the Baltimore "Sun;" and then the Albany papers came into existence. Finally, these outside papers went to New York and said: "We wish to use this news you are gathering, and we will pay for it; fix a price, and we will pay for it delivered at our office over the telegraph-wires." The New York papers assented to the arrangement, and established relations with these interior papers conditioned upon the interior papers' paying them a fixed charge per week, and also furnishing the news of their immediate vicinity in exchange. That was the way the Associated Press began, and has continued to grow into the great news-gathering organization that it has now become.

The New York papers then were serving papers in New England, in New York State, Pennsylvania, and in the West. As the business enlarged, the New England journals decided to organize an association called the New England Associated Press. It was a distinct body, and, instead of making individual contracts, made a contract as an organization with the New York journals. Then the New York papers organized themselves into an association called the New York Associated Press, and established their own agent or manager. Under their rules, all of the news that the New York "Herald," the New York "Sun" or New York "Tribune" got they turned into a common pool; in other words, they "pooled their news." One copy of a piece of news was dispatched to the "Herald" office, or "Sun" office, or "Tribune" office, as the case might be, and another copy of the same article or item — a duplicate — would go to the New York Associated Press office, the several papers simply combining to use their special service to maintain an association. After making this contract with the New England Associated Press, the larger association made one with the New York State Associated Press, then with the Baltimore Associated Press, the Washington Associated Press, and finally with the Western Associated Press.

Some years later, or about 1870, the Western Associated Press, chiefly, as well as some of these tributary associations, grew restive. They did not want to continue to be simply tributary to the New York association. There were two reasons for this: one was that the New York association controlled absolutely the character of the news to be gathered, and was selling this "pooled news" at a price that made their own cost them practically nothing. The tributary associations wanted not only a voice in the management, but they wanted the plan rearranged so that the New York papers would pay their proportion for gathering this news. In 1882, after some controversy, the Western Associated Press formally severed its relations with the New York association papers, put its own agents in London and in Washington, and began a competitive service. That competition lasted but a few weeks, when the New York Associated Press threw up its hands, and a compromise was effected by which the New York Associated Press and Western Associated Press entered into an alliance, the Eastern organization naming two members, the Western naming two, of a joint executive committee to control the details of the business. It was really an amalgamation of the two associations. A fifth man on this joint executive committee was taken from New York, while the general manager was taken from the West. That plan of working together continued for ten years.

Meanwhile a rival association had grown up, because one of the features of the Associated Press organization was that it was a close monopoly. No news could be served to any new paper in any town without the consent of the existing press papers in that town — the unanimous consent. Each Associated Press paper had a veto upon any new paper

coming in. The result was, that every now and then new papers would be started without the Associated Press service; and enough of them grew into positions important enough to enable them to establish a rival association, which was called the "United Press." This organization had been started under three or four names; it was called at one time the American Associated Press, then the National Associated Press, and finally developed into the United Press. Not only was this new association fostered by the fact that there were papers outside of the Associated Press which required service, and which were willing to help support it, but there were also a number of rival telegraph companies, like the Mutual Union, the Baltimore and Ohio, the Postal, and others. The Associated Press was identified closely with the Western Union. These other telegraph companies came into existence as rivals of the Western Union, and the cost of service over their lines was very cheap; consequently it was an easy matter to establish a cheap news-service, and small papers could afford to pay for it. But it still remained true that the Associated Press held a commanding place.

In 1887 the United Press made a secret agreement with the executive committee of the Associated Press, the result of which was a practical union of the two organizations. The Associated Press was in the nature of a coöperative organization; that is, its membership, particularly the Western Associated Press, extended to every paper of importance; they were all shareholders in it. The United Press was started originally on the same plan, and by the sale of stock in its treasury and by virtue of the arrangement made with the Associated Press, the United Press stock was soon in the hands of two or three men — that is, enough to control it absolutely — and they sold at a nominal price some of this stock to the executive committee of the Associated Press. It became a dividend-paying stock at once, for this reason: that the terms of the agreement between the United Press and the Associated Press provided that the Associated Press report should be given to the United Press in exchange for its report. The United Press then had no expense for gathering news, and was a money-making venture. This ran on until the truth was discovered, in 1891, and steps were immediately taken to repudiate the whole arrangement. Then open warfare came on between the United Press and the Associated Press. Naturally, those members of the executive committee who were repudiated by their fellow-members and denounced, went into the United Press and left the Associated Press and undertook to destroy it. The struggle culminated in the assignment of the United Press, March 29, 1897. The Western Associated Press was reorganized into the Associated Press, was made a national organization, and from 1893 it has gone on building itself up, until it is now back to the normal position that it held before the fight began.

This outline represents the relations of the Associated Press with the newspapers it serves in America. For the purpose of gathering foreign news it now has correspondence with the foreign news agents — the Reuter, Havas, Wolf, and the different agencies all over the world. It has contract relations with Reuter and Havas, which cover Great Britain and her colonies, France, Belgium, Switzerland, Portugal, and some parts of South America; with the Wolf Agency of Berlin, which covers Germany, Austria and Hungary; with the Stefanie Agency, which covers Italy; with the Nordisches Telegram Bureau, which covers Russia; with the Norsky Telegram Bureau, which covers Norway; with the Svenska Telegram Bureau, which covers Sweden, and with the Agence de Constantinople, which covers Turkey. The way they operate is this: Take, for instance, the Stefanie Agency. It gathers all the news of Italy into Rome, and redistributes it to all the cities of Italy. Then it sends a budget of news — it may be 100 words or 500 words — to London, and also to Paris, and receives from each of these places a budget, which it in turn also distributes to the different cities of Italy. The Associated Press does the same. It has Walter Neef in London, and Count Wolf von Schierbrand in Berlin. All the news that comes into the Wolf Agency at Berlin, Von Schierbrand sees, and makes up a budget and telegraphs it to London.

Reuter gets his budget from his different European agencies, and Walter Neef and his staff look over Reuter's dispatches and send to America whatever may be of interest here. This in turn is sent out

to papers in the United States. On the other hand, Reuter has his agent in the New York Associated Press office, looking over its dispatches and sending to him whatever may be of interest to Europeans. By this means there is a perfect system of exchange of news by the Associated Press all over the world. It operates also with a system of leased wires that run all over the United States and to the City of Mexico. Then for Canada it has an exchange arrangement with the Canadian Pacific railway by which that company gathers all of the news on its line and delivers to the Associated Press at four points in this country — Bangor, Buffalo, Detroit, and Seattle. And the association delivers its news to them at these points for use in Canada.

Such in brief outline is the story of the newspaper activities of the American Continent. MELVILLE E. STONE.

LITERATURE AS A CAREER AND LITERATURE AS A LIVELIHOOD

IT is no longer fashionable to talk, as men used to do, of "rushing into print." We do not consider, nowadays, that an aspiration to write is synonymous with the temerity of those who sally boldly where angels fear to tread. When a man writes a sonnet we do not hold that he sets himself up as a rival to Shakespeare; or, when a woman indites a few chaste lines on love, we do not hasten to the conclusion that she hopes to assail the fame of the "Sonnets From the Portuguese." Print is not so precious that we must needs regard only masters' work meet for its embalming enhancement. There is no divinity that doth hedge a writer, so we talk about writing as a profession for men and women, precisely as we talk of teaching, or law, or science, or art.

Muses are very frankly gone out of fashion, and it is as fitting to ask if a young man of twenty may reasonably hope to earn his bread by writing, as to ask if he may reasonably hope to earn it by teaching school. Perhaps in a majority of cases time only will prove either, but there must be, and are, instances in which an individual needs no experiment to tell him that he is as unfitted for writing of any sort, as for preaching, or for engineering a telegraph line. If, however, there is any doubt in his mind, he is at liberty to settle it. Nothing is so easily tried as the path to literary success. No credentials are required, there is no man to ask what basis of fundamental knowledge lies back of this claim to professional consideration. Paper and postage stamps are literally all it costs to find out whether one can or cannot make a living by his pen. And here enters the pertinent query: How long shall one persevere?

This is the opportunity of common sense. How long shall one try teaching before he decides that it is not the calling wherein he can make the best of himself and of life? How long shall one stick to a cobbler's bench when he finds it difficult to sell his shoes? Take the matter of writing out of the realm of mediæval superstition and bring to bear upon it some good, end-of-the-nineteenth-century sense. Do not be deluded by sentimental stories of the perseverance of young genius under difficulties. If you have genius like Keats, criticism will not kill you as a writer, even though it hasten your death as a man. But there is an obverse side to this story, and one wishes the history might be written which could show how many good house-wives, and mechanics, and scientists, and parsons, and clerks have been denied to the world that needs them, because certain persons did not recognize the inutility of trying to write.

This brings us to the consideration of our subject proper, — Literature as a career and literature as a livelihood. There is a vast difference between the two, and a difference that should be fully comprehended by every one who contemplates the glories of appearing in print. Literature as a career may be attempted by anybody with intervals of leisure in his life. Literature as a livelihood is a serious business, and no one should enter upon it without particular qualification.

Literature is a career to many persons, an incident to some, and a livelihood to the smallest proportion. It is a career

to men like Brander Matthews, and Woodrow Wilson, and William Milligan Sloane, and Charles Eliot Norton. They are all eminent professors, and teaching is their profession; but their literary efforts, done as side-issues to the main businesss of life, have been so successful and so far-reaching in their success that, to most people, these men are literary celebrities first of all, though it is doubtless true that to their immediate circles they are professors first and writers incidentally. It comes with a shock to many who are familiar with Matthew Arnold's exquisite and scholarly work, to learn that all his life long, while he was editing Wordsworth and writing classic poems and stirring the thought of his times with "Literature and Dogma," he was earning his bread by going about England at the miserable drudgery of examining school children. Oliver Wendell Holmes was an enthusiastic physician, and quite as famous in the world of medicine for his contributions to that science, as in the world of letters for his "Autocrat" or "Elsie Venner." Among writers whose names are at present on men's tongues, Edmund Clarence Stedman is a banker, James Lane Allen is a lawyer, Henry Van Dyke is a clergyman, Louise Imogen Guiney is a postmistress, John Vance Cheney and George Haven Putnam are librarians, and so on. The list might be continued almost indefinitely. Perhaps not one of them, in spite of undoubted literary success, makes enough out of literature to provide a living.

Literature as a livelihood, usually, though not always, means something besides writing. The "something" may mean lecturing, like Mark Twain and so many others, that one does not know where to begin or end the list of those who, having thrown themselves wholly upon letters as a profession, hasten to help out its yield by the aid of lecturing or reading from their previously published work. Editing is the mainstay of a very large proportion of those who own literature as a profession. Charles Dudley Warner fills a double editorial capacity, on his own paper in Hartford, and on Harper's Magazine. John Kendrick Bangs finds editing a material help to humor, Margaret E. Sangster depends on editing for a livelihood, Robert Bridges is an editor on one magazine and a critic on two others; George W. Cable edits a magazine, and Richard Harding Davis has found editorial connections very agreeable even in his meteoric career. I might multiply this list, for it is a long one. Lowell and Bryant were editors, Bryant on a daily, that meanest of drudgery. Whittier was an editor, what part of his life physical suffering would permit any occupation. Dickens and Thackeray were both hard-working editors, and the list of British writers of the present day whose livelihood is first editing, then writing, is extensive.

The number of writers, like W. D. Howells, and James Whitcomb Riley, and Anthony Hope, and S. R. Crockett, and Rudyard Kipling, whose sole sustenance is by their pens, is small indeed. Even Mrs. Humphry Ward, who is said to have received two hundred thousand dollars for four novels, is not dependent upon her pen, for her husband is a well-known journalist and art critic of the London "Times." Doubtless Mrs. Ward could live very comfortably on her average income of five thousand pounds a year, but it is a fair question whether Mrs. Ward, if dependent on her pen for support, would make five thousand pounds a year, and still more fair is the doubt if any other woman in this one generation may reasonably hope to make literature a livelihood to the extent of twenty-five thousand dollars per annum. The number of individuals of either sex, who are making any such sums, may be counted on the fingers of one's hands, and neither you nor I have any more reason to anticipate such a career for ourselves than we have reason to anticipate being President. Literature as a livelihood, apart from any other aids to bread and butter, is a very serious business for most who are in it. I know people whose names can never be dissociated from the history of American letters, who find it quite as "interesting" to keep the tradesman paid up, as most clerks find the same proceeding.

Then there are the "hacks," who scramble from year's end to year's end to get a roof over their heads, with three meals a day, and a change of raiment. They seldom attain any of the sweets of fame, and they learn all the precariousness of existence. They are, in the main, a pitiful army. Most of them are in their present position because they tried a higher and found that they could not

make it "go." Many of them enjoyed a momentary fame. More of them have been so harried with pot-boiling all their lives that they have scarce had time to look up at the heights, only to grub at what came nearest to hand. Few ventures could be more perilous than the venture of trying to live by the pen alone.

With all the earnestness at my command I urge that young men and women in particular do not leave homes, even of barest sustenance, to come to cities chasing the *ignis fatuus* of literature as a livelihood. Nothing is surer to light over a treacherous bog, nothing has less of promise or more of peril in it. Heed my warning, and the warning of hundreds of others, and *don't* hope to start out with one big stroke and pull to the shore of sustenance by letters. I think I do not err on the side of caution when I say that the safe rule is, do not attempt literature as a livelihood until you have a definite opportunity. And definite opportunities of this sort are few. Moreover, they almost never open to the knock. There never are editorial positions vacant. There never are any advantageous things of this sort for the tyro, for there are too many who have made successes of literature as a career, from whom to draw men and women who can and will, gladly, fill positions which make of literature a livelihood. Experiment with literature as a career, in addition to your profession, if you will, or as an incidental in an otherwise occupied life, but be shy of it as a sole dependence for support, as you would be shy of any almost certain failure.

Considering how small a proportion of persons in any commonwealth can expect to occupy the few situations which insure a livelihood from letters, it is not saying too much, I think, to say that no one has any reasonable right to expect to live by letters. "She expects to support herself by her pen," said a benevolent man of a young woman who is blind and who writes verses. He might quite as reasonably have said "she expects to make her living by steel engraving." Perhaps he was thinking of Milton. Perhaps he does not know that when Milton wished to pour out his soul, he wrote or dictated "Paradise Lost," receiving for it the princely sum of five pounds, though, of course, in his day that was more than the equivalent of twenty-five dollars in ours. But when Milton wanted bread and butter he found it convenient, when his patrimony was exhausted, to teach or write political treatises for his party, or serve as foreign correspondent for the English Commonwealth. No more, it is safe to say, than he could have lived on poetry in the year 1650, could Milton have lived on it in the year 1880. Tennyson did, Longfellow did, to a degree, but Milton could not have done it, and there is no man one knows of to-day who is doing it, with perhaps the exception of James Whitcomb Riley, and the possible exception of the English laureate, by virtue of his preferment.

The reasonable person, I say, does not start out in life with the idea of making literature yield him a livelihood. The most a reasonable person expects is to earn his bread by some other profession and perhaps butter it with the aid of letters. Sugar should not be contemplated by the literary aspirant with any more sanguine contemplation than the average boy should regard the Presidency or the Ambassadorship to England. He *may* get one, or both, but he is better off in not expecting either. There is one man in this country who gets ten thousand dollars a year for reviewing a handful of books in the back pages of a monthly magazine. There are several hundred who get two thousand or considerably less, per year, for reviewing armfuls of books every week on a daily paper, and doing odd jobs in between, too. There are several thousands of men in the country who have eager eyes on these two thousand dollar positions and who count the days until they may possibly attain to one of them.

Reviewing, editing, reading manuscripts for publishing houses, — these are about the only resources of the man or woman who aspires to one of the scarce "berths" of the literary profession. And, as I said, these berths are never vacant. Before a man steps out of one of them, half a dozen men have been noted for his probable successor, and in this progressive day, when competition is so fierce, it is a bigger, better man that is in demand every time, and not a small man for an experiment. What more natural, almost inevitable, when "Current Literature" wanted an editor, recently, than that the offer should be tendered some man like

George W. Cable, and that Mr. Cable, knowing full well the precariousness of living by novels alone, should be glad to accept a substantial aid to the problem of living by literature? Thus is recruiting done, and not by opening the doors to the importunate knocks of hungry young men from Grub Street. The only way to literature as a livelihood is through literature as an incidental phase of life. "How can I become a book-reviewer?" wrote a young man from Texas. "The way to become a book-reviewer," was the reply, "is to know books so well, and life so well, that your judgments win you a fame which will make you desired of some editor." This was a trifle hard, maybe, but the way to begin is to begin.

De Maupassant, they say, wrote for ten years under a master of literary style, before he ventured to offer anything for publication. But not many besides De Maupassant would be equal to such self-repression, and if they were, there would be so few bad writers that there would be suffering for want of "hacks." There is an obverse side to this, too, and I am inclined to think it the reasonable side. It is certain that nothing is so hard on mistakes and crudities as print, "cold type," as it is well called by many. No amount of criticism and instruction is comparable to the deep impressiveness of one's own mistakes mercilessly perpetuated in print; and as no honest and humble person is ever ashamed of the steps by which he rose to better things, I say, let the literary novice publish, if he can. There are editors enough to keep the utterly "impossible" things out of type, so that the community need not suffer infliction provided it knows a reputable magazine from a disreputable one.

And here is the place for me to make note of one of the most important things in the career of a literary experimenter, and that is the recognition of difference between good company and bad in literary associations. There are a great many bad writers in the world, and there always will be a great many, for there is a place for them to fill. There are men and women who earn large incomes by the steady production of stories and other stuff which fill the columns of papers pandering to the lowest currents of life. And by low, I do not necessarily mean vicious. I mean cheap and tawdry and meretricious. The persons who write like this are no more recognized by lovers of letters than a vulgar, be-tarlataned ballet girl would be recognized by Sir Henry Irving and Miss Terry and Mme. Duse, as a sister in dramatic art.

Beginners in writing cannot learn too soon that all print is not the way to fame, but that some of it is the way to infamy. And then there is a large, a very large, class of writers in whose lives and work reputation does not figure. They write, constantly, and in hundreds, and sign their names to inoffensive productions which very probably fall with the blessing of good, if humble, seed in some of the obscurer corners of the earth. Not many, if indeed any, of these writers depend on their writings for a livelihood. Many of them are house-mothers, reaping an occasional five dollar bill from a careful use of precious leisure. A goodly number are clergymen of modest attainments, with a modest message for modest folk. There is nothing glorious, as the world counts glory, in such writing,—nothing more than a tiny local prestige, perhaps, and little dribbles of extra cash,—but an exceedingly large amount of reading matter is gathered from such sources and without doubt a great deal of quiet pleasure and cheer and help is thus distributed. Writers of this class seldom degenerate into the class composed of the tawdry and flippant, nor do they in many instances pass on into the class usually defined as "literary."

A beginner in writing cannot too soon determine to which class he may reasonably hope to belong, nor can he too conscientiously persevere in his efforts to enter a certain class and maintain his efforts to keep out of others, once he has made up his mind. The way to The Century is *not* through The Farmer's Guide, and nothing could be more detrimental to the writer who aspires to the The Century at some time, than to dally, on his road thitherwards, with second-rate publications. He need not refuse to publish until The Century will accept his MS., but it is his business to learn what papers and magazines "coming" writers are oftenest found in, and to hasten, if may be, to join their company. No more than a young woman need expect to fit herself for court society by consorting with chambermaids, need she expect to graduate into literature from an apprenticeship with The Boys' and

Girls' Friend. Pleading that you do not know what is what among so many papers is no excuse, if you have taken up writing with any expectation of success, for in that event it is your business to know, —almost your first business, if not quite your first. This is where so many make fatal mistakes. This is how many fall into the clutches of literary bureaus and worse.

In another paper I will try to offer a few suggestions about the preparation for a writing career, and about the very important problem, once the preparation is gained, of how to get into print.

CLARA E. LAUGHLIN.

WESTERN WRITERS IN LONDON

THE development of an interest in American literature in England during the past two or three years is significant, especially when we know that the majority of the writers who have been taken up have been Westerners; and Western people will be glad to know the exact opinion which the London critics have of these productions.

One of the first Western writers to be taken up in London, as everybody knows, was Bret Harte, for some years editor of the "Overland Monthly" in California. He drifted East, and soon went as consul to Glasgow and other ports, and finally settled in London some fifteen years ago, where he was able by his pen to make a handsome living. And, strange as it may seem, he has never been more popular and high-priced in London than in New York. General Lew Wallace's book "Ben Hur" is as common in every English bookstore as it is in our own. We all know the story of its first success in America, how, more than fifteen years ago, it was published in New York and so few copies were sold that at the end of a year the publishers were on the point of destroying the plates, and then how it suddenly leaped into the greatest popularity of any similar book in this country. Every "standard library" of cheap books in London to-day has "Ben Hur." A London publisher once said to me, "Copyright in America? Why, I always thought 'Ben Hur' one of our own old classics, long ago run out of copyright. I certainly never thought it was American." There are plenty of people in England who are familiar with Longfellow who do not know that he is an American poet. American writers once taken up in England are fully appropriated, and now Henry James and Marion Crawford are looked on in the light of old English stand-bys.

These writers have made their fame and fortune in London chiefly because they went there and became English writers, or because for special reasons they were accepted as classics by the British public. The latest successes have been obtained by Americans because they were American, and on their own merits. Mary Wilkins is accepted and read in London; but Mr. Howells, though he is known to a limited few, is not generally spoken of except as the figurehead of American current literature. The present "boom" of American writers has been of quite a different kind.

Two books appeared in London at about the same time, both characteristically American, and both highly successful financially. One was Stanley Waterloo's "A Man and a Woman," the other Stephen Crane's "The Red Badge of Courage." The career of the second was widely discussed and persistently advertised in this country, because the American publishers were a well-known New York firm. The story of the other has never been told, because it had appeared here only in cheap form, from a Chicago house lacking in literary prestige.

Mr. George Redway was just starting his publishing business again after a lapse of some years, when an English gentleman went to him with Mr. Waterloo's "A Man and a Woman," and said that he was anxious to see that book published in London, and he offered to pay the necessary expenses. It was a matter purely of admiration, and of a remarkable kind, too. As a commission book the publisher accepted it, determining to bring it out as if it were an original English publication, in what is equivalent with us to the dollar form. As it was going through the press he began to get an admiration for it himself. "The scenes are fresh," he said, "the charac-

ter-drawing vigorous, the literary art, though crude, is effective. Why shouldn't the book "catch on?" It did, and a considerable number of thousand copies were sold. Immediately Messrs. A. & C. Black, one of the oldest of British publishers, brought out another volume by the same author which was also well received.

It was Mr. Waterloo's success rather than the better known success of "The Red Badge of Courage" which opened the way for Opie Read's "A Kentucky Colonel," and the publications by James Lane Allen and Joel Chandler Harris.

The work of a number of American women writers has been brought out in London, with a more moderate success, among other books Miss Lilian Bell's "A Little Sister to the Wilderness." The criticism on these books has been much the same and very characteristic. "American women," they say, "have a passion for tall writing — ambitious general phrases, exalted description, a profusion of sonorous adjectives," such as Amélie Rives in her 'lush' poetry has made so notorious. The men are crude in their art, unpolished in their English, and careless in the development of their stories; the women are feverishly ambitious. But, for all that, London has found in them a certain vitality and vigorous promise — as yet little more than a promise — for genuine literature to come.

Following close on the success of the writers I have mentioned came Mrs. Gertrude Atherton. For several years she had lived in New York (she was a California woman) trying to make her reputation in literature, but with little success. Her books were published and had excellent sales, but her reputation was never established. She was too virile and individual in her art, too outspoken and definite. At last, in despair, she went to London, and within six months books of hers had been accepted by such leading publishing houses as Cassell & Co., Mr. Hutchinson, and John Lane. The first two published books of hers were well received and had most excellent sales. Mr. Lane is just bringing out her most ambitious book, "Patience Sparhawk and Her Times," a work in which twenty-five typical American characters are faithfully studied.

These are some of the more important successes of American authors in London; but there have been others of lesser note which serve to show which way the wind blows. A young Chicago journalist, bold in his ardor, left an excellent salaried post to go to London for the purpose of getting a play accepted. He had produced one or two in America, but in his larger ambitions found his way blocked by work that came from London. So he thought he would go there, and if he succeeded American doors would be open to him. He had no money, and little understood the long, hard waiting which every unknown apprentice in London must go through. He nearly starved, living for months on five loaves of bread a week and a dinner on Sunday. But for all that, he was considered remarkably successful by his English *confrères*, who had had to wait three times as long for the same recognition. Within six months he had short stories accepted by nearly every periodical of importance in London. The "Pall Mall Magazine," the "Idler," "Black and White," and "The Ludgate," had taken more than one, and finally he was made assistant editor of "The Yachtsman."

We are often told of the prejudice in London against Americans, and especially against those who write the American language, as it is called. Until within a year or two American printing has been very bad, and has had local peculiarities which were very obnoxious to the English reviewer. But the American English of educated and well-trained writers is as pure as the English of authors in London, and the prejudice against Americans who go to London does not now exist. The present writer had the honor of producing two books in London, one anonymously, and in neither of them was a single so-called Americanism pointed out; yet he had been wholly educated in America and knew nothing of English tastes or habits of speech.

As to the prejudice against literary Americans in London, it may be said not to exist, though London has a peculiar way of accepting the contributions that are offered her. She takes anything of excellence, no matter whence it comes; but she appropriates it wholly as her own, and allows America no credit for her own discoveries. Moreover, she prefers to make a purely independent reputation for a book. One that has merit but is quite unknown at home

has a better chance than one heralded from the country of its origin. Men filled with a longing for fame and success go to London from the world over, — from Canada, New Zealand, Australia, South Africa, and likewise even from the continent of Europe. Marten Maartens, born and bred a Dutch nobleman, and living on his estates to this day, chose to write his well-known novels in English, to him a foreign language, and few of his Dutch neighbors even now know of his renown. England took him as she takes every man of genius who will come to her, and has added him to her own galaxy. It may be remembered that she took even Disraeli, a Jew of Spanish origin, and made him prime minister, distasteful as the act was personally to most British politicians. But what England takes she claims for her own.

The manager of Macmillan's New York publishing house remarked not long ago that he looked for the best productions of literature in this country now from the middle West. He, in common with other keen and impartial observers, had seen that here there is a spontaneity and freshness of ideas, a vigor of free thought, a daring of artistic execution which is likely at any time to command the attention of the world. And this opinion is confirmed by the fact that four-fifths of the ten or a dozen writers from America who have been successful in England during the past few years have come from the West.

SHERWIN CODY.

THOUGHTS ON KNOWLEDGE, LIFE, AND WORK:

VI.—BOOKS ON READING. [Concluding Paper.]

THERE can be no question of the vastness of the subject on which we have here undertaken to write. "Of making many books there is no end." Whether we think of the long extent of the literatures of the world, some of them what we call dead, although they live forever, when we think of the vast variety of languages in which those literatures are embodied, or of the many kinds of literature which call for attention, it will be evident that not one chapter, but many volumes, would be necessary to do anything like justice to such a subject. It is also evident that the pretensions of any one who undertakes to handle this theme ought to be very modest, and that the expectation of his readers should be of the same character. The utmost that could be attempted would be to offer hints, derived from one's own experience and from the experience of others, which might be useful to those who have made comparatively little progress in the knowledge of books.

Greatness of the Subject

Some Uses of Books 1. Negative

Let us begin by noting some uses of books; and these are both negative and positive. Certainly reading will form a better *employment of time* than many other occupations — than chattering or dawdling, for example. It would, perhaps, be too much to say that great readers are not great talkers, when one recalls such examples as Lord Macaulay. Still, it is probable that most of the inveterate chatterers are not great readers; and, at any rate, they cannot chatter and read at the same time; and besides, even when a man who reads much talks much, at least he has something to say. Then in another way, reading may be negatively useful in helping to counteract the somewhat excessive practical tendencies of the age in which we live. Say what we may, a merely commercial spirit will not raise the tone or ultimately increase the well-being or the happiness of society; and it is difficult to see how men can cultivate ideal aims without the aid of literature and books.

2. Positive Uses

But the uses of books are positive as well as negative; and these uses are manifold. "Studies," says Lord Bacon, in words often quoted, "Studies serve for delight, for ornament, and for ability. Their chief use for delight is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgment and disposition of business. . . . Crafty men contemn studies, simple men admire them, and wise men use them. . . .

Reading maketh a full man, conference a ready man, and writing an exact man. And, therefore, if a man write little, he had need have a great memory; if he confer little, he had need have a present wit; and if he read little, he had need have much cunning to seem to know that he doth not."

(1.) **Knowledge** Reading, as Bacon adds, is a way to knowledge. It "maketh a full man." Let us grant that it is not the only way. Much practical knowledge may be gained without books. Even theoretical knowledge may, to a large extent, be acquired without reading, by men of an inquiring and watchful disposition. Doubtless the wise man finds means of knowledge everywhere. He "finds tongues in trees, books in the running brooks, sermons in stones, and good in everything." Yet this does not affect the general principles that knowledge and learning, in all their forms and departments, are to be gained by study, and not otherwise. What we want to know we can find in books, and, generally, better than elsewhere. "The reading of good books," says Descartes, "is like a conversation with the best men of past ages, and even like a studied conversation in which they communicate to us only the best of their thoughts. . . . To converse with those of other ages is very much the same thing as to travel. It is well to know something of the manners of different peoples, in order to form a sounder judgment of our own, and to prevent us from imagining that all which is contrary to our own customs is contrary to reason; as is the way with those who have seen nothing else;" and Milton declares, "a good book is the precious life-blood of a master spirit, embalmed and treasured up on purpose to a life beyond life."

(2.) **Cultivation** No less valuable than the acquisition of knowledge which comes from reading is the enrichment, the cultivation, the refinement of mind which is a consequence of familiarity with the best writers. In this respect it is the same with books as with men. If our constant or frequent intercourse is with the rude and uncultivated, we shall invite the same spirit, and so with higher and better kinds. If our books give us the best thoughts of the best minds, they must raise and purify us. Sir George Trevelyan, the biographer of his uncle, Lord Macaulay, gives an interesting account of the testimony of that great writer on this subject.

Macaulay's Testimony "When I asked him," says Sir George, "to what he owed his accomplishments and success, he said to me, when I served as a young man in India, at the turning-point of my life, when it was a mere chance whether I should become a mere card-playing, hookah-smoking lounger, I was fortunately quartered for two years in the neighborhood of an excellent library, which was made accessible to me." And again he says: "Of the feelings which Macaulay entertained towards the great minds of bygone ages it is not for any one except himself to speak. He has told us how his debt to them was incalculable; how they guided him to truth; how they filled his mind with noble and graceful images; how they stood by him in all vicissitudes — comforters in sorrow, nurses in sickness, companions in solitude, the old friends who are never seen with new faces, who are the same in wealth and in poverty, in glory and in obscurity. Great as were the honors and possessions which Macaulay acquired by his pen, all who knew him were aware that the titles and rewards which he gained by his own works were as nothing in the balance as compared with the pleasure he derived from the works of others."

(3.) **Recreation** Books serve for recreation, for solace and delight. Recreation is not merely allowable; it is a duty, lawful and necessary. "I have friends," says Petrarch, "whose society is extremely agreeable to me; they are of all ages and of every country. They have distinguished themselves both in the cabinet and in the field, and obtained high honors for their knowledge of the sciences. It is easy to gain access to them for they are always at my service, and I admit them to my company and dismiss them whenever I please. They are never troublesome, but immediately answer every question I ask them. Some relate to me the events of past ages, while others reveal to me the secrets of nature. Some teach me how to live, and others how to die. Some,

by their vivacity, drive away my cares and exhilarate my spirits, while others give fortitude to my mind, and teach me the important lesson how to restrain my desires, and to depend wholly upon myself. . . . In return for all their sciences they ask me only to accommodate them with a convenient chamber in some corner of my humble habitation where they may repose in peace; for these friends are more delighted by the tranquillity of retirement than with the tumults of society." *

All experience and all testimony worthy of consideration are on the same side. One other witness may here be adduced, and that one of great eminence, Sir John Herschel: "If I were to pray," he says, "for a taste which should stand me in stead under every variety of circumstances, and be a source of happiness and cheerfulness to me through life, and a shield against its ills, however things might go amiss and the world frown upon me, *it would be a taste for reading*. . . . Give a man this taste and the means of gratifying it, and you can hardly fail of making a happy man, unless you put into his hands a most perverse selection of books."

Purchase of Books

In regard to the procuring, or purchase of books, a hint may here be offered. Most students will probably find a difficulty in getting the books they actually want; but some are more highly favored by fortune. There are dangers to both. A man who has plenty of money is tempted to put books on his shelves unread; and, of course, that may be lawful enough with standard classics and with books of reference. Yet there is a danger of accumulating books which represent no study or experience on the part of their owner. A man should be able to read his intellectual history in his library. On the other hand, the poor man is tempted to put mean and shabby or badly edited editions of books on his shelves. Perhaps it is wisest for most students to buy books slowly, and, as far as possible, to get good editions, and these in decent apparel. It is cheapest in the long run. A real book-lover is not contented to possess poor copies of his favorite authors, so that he is sure to supplant such books by better editions afterwards; and this has the further disadvantage that the copies he finally possesses are not those through which he first made acquaintance with the writers. There are a good many books which students may lawfully borrow, either from a circulating library, or from a trusting friend (and no genuine student will prove unworthy of such trust). Such are books of ephemeral interest and importance. But books intended for real work should be the student's own. He should be able, when he desires it, to make his notes on the margins.

Taste for Reading

It may be said that a great deal of all this applies only to a certain number of men and women, since a great many persons have no taste or inclination for reading whatever. There is no denying such a statement, unfortunately. And persons who have no such taste, and who are resolved to make no effort to form it, are not contemplated in these lines. Yet a taste for reading may often be acquired, and we hold that it is a most clear duty to acquire it, where that can be done. It is perhaps too readily assumed by many that they neither have any such taste nor are capable of acquiring it. Most men could do something in this direction, if they tried, and the neglect to do so is often of very serious consequence.

Read What You Like

By way of forming such a habit, it is a good thing to begin by reading the kind of books that one likes, to be tolerant of almost any kind of literature, except the actually bad. Begin with poetry, if that is attractive, or with fiction, if that is easier. Something will be said of these departments of literature hereafter; they are mentioned now as mere specimens of what may be read as an incentive to go further. Sir John Lubbock says: "In reading it is most important to select subjects in which one is interested. I remember years ago consulting Mr. Darwin as to the selection of a course of study. He asked me what interested me most, and advised me to choose that subject. This indeed applies to the work of life generally." And Dr. Johnson (in Boswell) says: "I am always for getting a boy forward in his learning, for that is

* Quoted by Sir John Lubbock in "The Pleasures of Life."

a sure good. I would let him at first read any English book which happens to engage his attention; because you have done a great deal when you have brought him to have entertainment from a book. He will get better books afterwards." And again: "Snatches of reading will not make a Bentley or a Clarke. They are, however, in a certain degree, advantageous. I would put a child into a library, where no unfit books are, and let him read at his choice. A child should not be discouraged from reading anything that he takes a liking to, from a notion that it is above his reach."

This is an excellent remark. We are too ready to assume that books are above us, from a false humility, often because we do not want the trouble of wrestling with them. "If that be the case," he goes on, that is, if the book is really too advanced for the child, "the child will soon find it out and desist; if not, he of course gains the instruction, which is so much the more likely to come from the inclination with which he takes up the study."

Cautions

This is one side; but there is another. There are a good many books the reading of which will do no manner of good to any one, but only harm. To such books we may apply, it is said, the sarcastic remark made to an unfortunate author: "I will lose no time in reading your book." The late Lord Sherbrooke (formerly the Right Hon. Robert Lowe) said: "Read, never mind what, the reading of better works will come;" but Mr. Frederic Harrison does not quite assent to this counsel. He says: "A habit of reading idly debilitates and corrupts the mind for all wholesome reading. The habit of reading wisely is one of the most difficult habits to acquire, needing strong resolution and infinite pains; and reading for mere reading's sake, instead of for the good we gain from reading, is one of the worst and commonest and most unwholesome habits we have."

In a previous part of the same essay Mr. Harrison had said: "We who have wandered in the wastes so long, and lost so much of our lives in our wandering, may at least offer warnings to younger wayfarers, as men who in thorny paths have borne the burden and heat of the day might give a clue to their journey to those who have yet a morning and a noon. As I look back, and think of those cataracts of printed stuff which honest compositors set up, meaning, let us trust, no harm, and which at least found them in daily bread — printed stuff which I and the rest of us, to our infinitely small profit, have consumed with our eyes, not even making an honest living of it, but much impairing our substance — I could almost reckon the printing press as among the scourges of mankind. I am grown a wiser and a sadder man, importunate, like that ancient mariner, to tell each blythe wedding guest the tale of his shipwreck on the infinite sea of printer's ink, as we escaped by mercy and grace from the region where there is "water, water everywhere, and not a drop to drink."

Carlyle

On the same side is Carlyle, who has spoken many true and beautiful words concerning books, yet thinks it needful to give this warning, in his rectorial address at Edinburgh. "I do not know," he says, "whether it has been sufficiently brought home to you that there are two kinds of books. When a man is reading on any kind of subject, in most departments of books — in all books if you take it in a wide sense — he will find that there is a division into good books and bad books. Everywhere a good kind of book and a bad kind of book. I am not to assume that you are unacquainted with this plain fact; but I may remind you that it is becoming a very important consideration in our day. And we have to cast aside altogether the idea people have that, if they are reading any book, and if an ignorant man is reading any book, he is doing rather better than nothing at all. There is a number, a frightfully increasing number, of books that are decidedly, to the readers of them, not useful. But an ingenuous reader will learn also, that a certain number of books were written by a supremely noble kind of people — not a very great number of books, but still a number fit to occupy all your reading industry. Do adhere more or less to that side of things. In short, as I have written it down somewhere else, I conceive that books are like men's souls — divided into sheep and goats. Some few are going up, carrying us heavenward; calcu-

lated, I mean, to be of priceless advantage in teaching — in forwarding the teaching of all generations. Others, a frightful multitude, are going down, down, doing ever the more and the wider and the wilder mischief. Keep a strict eye on that latter class of books, my young friends."

Special Caution

If the force of these remarks cannot be denied, it may be well to add some thoughts, a little more in detail, on the kind of literature which should be avoided, especially by the young. First among these should be placed books of an impure and obscene character. Such books can be of no possible use to any human being, and to younger men and women they are inevitably most injurious. It would be absurd to give titles of such books, but we mean no offense to the French nation, nor any disparagement of its splendid literature, when we strongly advise young people to abstain from French novels, unless their character can be certified by some trustworthy friend.

With regard to another class of books, those tending to unsettle religious faith, and breed a spirit of scepticism in the mind, one piece of advice may be given. We have no right to prohibit such literature to the inquiring mind. But we think it would be well to abstain from such studies until they can be prosecuted with care and some approach to completeness. This is certainly a case in which "a little learning is a dangerous thing."

Besides the two classes of books described, there is another kind which may well be avoided, those distinguished by a kind of coarse and vulgar wit which have a tendency to lower and corrupt the taste. We do not, for a moment, suggest that America has a monopoly of third-rate wit and humor. Some of the worst books of this class have come from the English press; but however that may be, let us make up our minds to read the best, and not the worst.

Guidance for the Young

It is of the young that we are chiefly thinking in these suggestions; and we may notice lists given by two writers to whom we are probably under greater obligations than we are aware of, Sir John Lubbock and Mr. Frederic Harrison. Each of these has furnished a list of the Hundred Best Books, which may be safely recommended to any one who is forming a library. They do not differ very widely; and there are few books mentioned by either which should be absent even from a small library.

One piece of advice may be given to the young, viz., that, on leaving school or college, they should carry on the studies in which they were there engaged — such as History, Literature, Science. Begin with the authors you like, and those whom you hear men of ability and taste approving, and you will soon find your way beyond those beginnings. Take any subject you please. Sort out the subject in the excellent "Guide to Systematic Reading in the Encyclopædia Britannica" prepared by Dr. Baldwin, study the articles to which you are there directed: then turn to the books recommended, and from that point you will find your own way as far as you please to go.

In close connection with this advice it would be well for every one to make himself acquainted with some one book or more, dealing with the principles of his own profession or avocation. Of course it is not recommended that any one should confine himself to such books. A physician who reads only medical books will not be the better physician for that — nor the lawyer, nor the clergyman. Acquaintance with general literature will give a greater breadth to our comprehension of our own proper business; but for all that it will be well to make a special study of that business. To know everything of something, and something of everything may be impossible; but the maxim points us in the right direction.

Choice of Books

And now comes the choice of books, of literature. "How," asks Mr. Harrison, "shall we choose our books, which are the best, the eternal, the indispensable books? . . . To stuff our minds with what is simply trivial, simply curious, or that which, at best, has but a low nutritive power, that is to close our minds to what is solid and enlarging, and spiritually sustaining?"

Books a Test

The same writer remarks with great truth and force that our appreciation of the really great writers will form the best measure of our own mental and literary cultivation. "If," he says, "you find Milton,

Dante, Calderon, Goethe, so much 'Hebrew-Greek' to you; if you have never opened the Cid, the Nibelungen, Crusoe, and Don Quixote, since you were a boy, and are wont to leave the Bible and the "Imitation" for some wet Sunday afternoon, know, friend, that your reading can do you little real good. Your mental digestion is ruined or sadly out of order. No doubt, to thousands of intelligent, educated men, who call themselves readers, the reading through of a canto of the *Purgatorio*, or a book of the *Paradise Lost*, is a task as irksome as it would be to decipher an ill-written manuscript in a language that is almost forgotten. But, although we are not to be always reading epics, and are chiefly in the mood for slighter things, to be absolutely unable to read Milton or Dante with enjoyment, is to be in a very bad way."

Again he goes on: "When will men understand that the reading of good books is a faculty to be acquired, not a natural gift, at least not to those who are spoiled by our current education and habits of life. *Ceci tuera tout*, the last great poet might have said of the first circulating library. An insatiable appetite for new novels makes it as hard to read a masterpiece as it seems to a Parisian *boulevardier* to live in a quiet country. Until a man can truly enjoy a draught of clear water bubbling from a mountain side, his taste is in an unwholesome state. And so he who finds the Heliconian Spring insipid should look to the state of his nerves. Putting aside the iced air of the difficult mountain tops of epic, tragedy or psalm, there are some simple pieces which may serve as an unerring test of a healthy or a vicious taste for imaginative work."

Before proceeding to notice some of the chief products of literature, we would suggest that almost every one would do well to make himself fairly acquainted with at least one language besides his own. It is not merely that this will give him an insight into the people who speak that tongue and the literature which they have produced; but it will enlarge his views of man and literature in general, and it will give him a deeper insight into his own language. It is not, however, possible for many to know all the great literatures at first hand; and therefore it will be well to find the best translations that can be had.

Let us name a few of the best books on some leading subjects of study.

I. HISTORY.
- General: Freeman's Historical Essays.
- Greek: Thucydides.
- Roman: Livy, Cæsar.
- Mediæval: Bryce's Holy Roman Empire.
- Modern: Freeman, Green, Ranke, Michelet, Thiers, Guizot, Carlyle, etc.

II. ESSAYS, PHILOSOPHY, RELIGION.
- Epictetus, Plutarch, Pascal (*Pensées*).
- Bacon (*Essays and Adv. of Learning*).
- Coleridge (*Aids to Reflection*).
- Carlyle (*Past and Present*), Thomas à Kempis's Imitation of Christ.

III. THE DRAMA.

Consult Schlegel's Dramatic Literature, especially on the Greek drama, yet note his prejudices against the French.
1. English: Shakespeare, Marlowe, Ben Jonson, Beaumont and Fletcher, Sheridan.
2. French: Molière, Racine, Corneille.
3. German: Lessing, Schiller, Goethe.
4. Spanish: Lope de Vega, Calderon.
5. Italian: Metastasio, Goldoni.

As a speciman of Spanish drama for English readers, Archbishop Trench's book on Calderon's "Life is a Dream," may be recommended.

IV. POETRY.
1. Greek: Homer (excellent prose translations by Butcher and Lang).
2. Latin: Virgil, Horace } good translations published by Macmillan & Co.
3. Italian: Dante: Translation by Longfellow excellent and literal; but Cary's gives best the spirit of the original. Petrarch.
4. French: Victor Hugo, de Musset, Coppée, etc.
5. German: As the dramatists. Some of Schiller's plays admirably translated by Coleridge. Goethe's *Faust*, also admirably rendered by Bayard Taylor.
6. English: Chaucer, Spenser, Milton, Tennyson, Coleridge, Wordsworth, Burns, etc.

V. FICTION.
1. French: Gil Blas.
2. Italian: I Promessi Sposi.
3. German: Auerbach, Von Hillern, etc.
4. English: Scott, Thackeray, Dickens, George Eliot, Charles Reade, Lord Lytton, Anthony Trollope, etc.

This is but a beginning; but the reader who goes so far will easily find his way onwards. As regards one method of reading, let us hear Lord Bacon again: "Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider. Some books are to be tasted, others to be swallowed, and some few to be chewed and digested. That is, some books are to be read only in parts, others to be read, but not curiously; and some few to be read wholly and with diligence and attention."

WILLIAM CLARK, D. C. L.

LEARNING LANGUAGES FOR BUSINESS PURPOSES

IN this country there are few phases of business life in which one cannot utilize a knowledge of one or more of the languages of Continental Europe. Such a knowledge is indispensable in localities where foreign immigrants have settled in sufficient numbers to maintain their vernacular against the encroachments of English. But even where this is not the case, and the naturalized German or Scandinavian has learned enough of English for the exigencies of business, he prefers to use his mother-tongue, and lends readier ear to the lawyer, physician, salesman, or political candidate who may be able to converse in it with a fair degree of fluency. Still more striking examples are furnished by the larger concerns of life — in social, financial and political matters, in which every creditable accomplishment is subsidiary, in its way, to success in business.

The frequency of international expositions, the increased facilities and conveniences of foreign travel, the growing requirements of traffic, all these have conspired in forcing upon the attention of our business men the desirability of acquiring a conversational knowledge of the principal modern languages.

Those of most consequence to Americans are German, French, and Spanish. Of these three the first is the most useful in this country, as the Germans greatly outnumber the foreign-born citizens of any other nationality, and in places have managed to keep their vernacular on an equal footing with English.

French is spoken or understood by all educated Europeans, and, on the Continent, at least, is indispensable to all who have any social or literary pretensions. Thus it easily takes precedence of German for all the purposes of the American traveller and sight-seer through the continent of Europe.

Spanish, as the speech of nearly one-half of the Western Hemisphere, is bound to be some day the medium for the transaction of an immense volume of business in American manufactured products. No business man can afford to ignore it, if he has any interest in South American trade.

Which of these widely-spoken languages a busy American will choose, depends, of course, on the use he intends to make of it. The most usual order of preference is German, French, Spanish, both for the reasons already given and the no less weighty one that a conversational knowledge of a language generally leads to a superficial acquaintance with its literature, and herein French and German far surpass Spanish for all the purposes of an educated American.

The vexed question of *method* requires careful consideration, for so many extravagant claims have been made for the one or the other "system" of learning languages, that the really meritorious ones are likely to be under-estimated. When the business man is informed that study jades the memory and grammar impedes progress, he is not prompted to expend the serious efforts which language-learning requires. Perhaps there never was a "method" that did not exhibit some deserving features, and all printed aids furnish acceptable help in one way or another; but the erroneous idea that a language can be learned out of pamphlets designed to be conned "while you wait at the ferry or station" is chargeable with too many failures for it to remain unchallenged here. "Twelve easy lessons" will do no more in language-learning than in piano-playing. Linguists are not turned out by any such expeditious process. The oft-paraded statements that Bayard Taylor learned German in three months (while he was walking about Europe and writing "Views Afoot"), and that Schliemann mastered modern Greek in six weeks, do not prove anything, and they actually conceal the facts, which are as follows: Taylor, in a few months, learned enough German to inquire the way and make intelligible (and presumably *intelligent*) remarks about the weather; Schliemann was able, after a few weeks, to make himself passably understood by the laborers employed in the excavations on the site of Troy. Both men became famous for their proficiency in languages, but this was the fruit of many years' intercourse with cultured persons, and not the product of haphazard conversation with German inn-keepers, or scanty intercourse with Greek laborers.

The only basis for correct speech is a

thorough acquaintance with grammatical forms, and probably the most practicable way of fixing them in the memory is by the use of the so-called "conversation-grammars," which have supplanted the familiar "Ollendorff." In these the lessons begin with a simple and concise enunciation of principles, accompanied by examples and followed by applications in the form of appropriate exercises for translation from and into the foreign language. Each lesson concludes with a ready-made conversation designed to exhibit the lesson-words in action, so to speak, and furnish new turns of expression containing them. Such grammars begin with the simplest features of the language and gradually increase in difficulty till all the facts of inflection and construction are set forth. From 400 to 600 pages are usually requisite for this, and from 1500 to 2500 words can be introduced and explained. This number is far in excess of a business man's ordinary needs, and, in fact, is a much larger vocabulary than any but literary men, public speakers and teachers can find use for. But more important yet than the "method" or grammar used is the teacher, for without *viva voce* instruction it is impossible to acquire a tolerable pronunciation. The instructor should be a cultured native of the country whose language is to be learned. However well an American teacher may understand the foreign language, he seldom succeeds in producing, much less imparting, the peculiarly elusive and indescribable intonation and emphasis which constitute the essence of a language's individuality.

Under the tuition of a competent and painstaking native teacher, enough of the grammar can be gone over in fifteen or twenty weeks (at the rate of three lessons a week) to allow of considerable conversation and supplementary reading. By the end of one year the grammar can be mastered, and an equal number of pages of parallel reading thoroughly worked over, and made to furnish themes for conversation and discussion with the teacher. It is just this part of the instruction which possesses the greatest value for the business man, and the skilful teacher can easily vary the work so as to make it seem like a pastime. It is often practicable for the learner to secure board in a cultured family whose vernacular is the language in hand, and this, with attending clubs, theatres, lectures, sermons, etc., affording facilities for accustoming one's self to the spoken language, must take the place of all those years of ceaseless practice and repetition, by means of which perfect fluency in the mother-tongue has been secured. Such a year's work would give a business man an available vocabulary of 2,000 words, at least, and he would be able to understand a great many more. He would not have gained a good accent, nor even naturalness of expression. Adults seldom attain to either excellence after years of residence abroad, necessitating daily contact with the language. But he would be able to express himself with reasonable fluency as well as propriety on the topics of every-day life, and to avoid the solecisms and egregious blunders which inevitably attend learning, as immigrants generally do, by ear alone. Moreover, he would be able to read with ease newspapers and the lighter forms of literature, and to follow understandingly the most rapid declamation and dialogue of a play in the language.

It is perhaps superfluous to state that this is a greater amount of usable knowledge than the graduates of our best institutions of learning bring home with them. Only under the most favoring circumstances do American students do better during a protracted sojourn abroad.

The one year's course of arduous study and persistent practice described above will have to be varied and curtailed greatly to fit the aptitude and capacity of different learners. Perhaps in the majority of cases only the necessary facts of grammar can be introduced, the main dependence being on the oral practice. When grammar is eliminated entirely, and practice in speaking supersedes study, we have the "Natural Method," pure and simple.

It is worth while to devote a little space to a description of a system, whose aims and possibilities have been so generally misunderstood. The teacher uses no language but his own in all his intercourse with the learners. His first words are short questions about objects which he shows them. These are usually such as have easily recognizable names in the language to be learned. By adroit repetition and suggestion he soon enables his pupils to utter the name as soon as the

object is held up to view. Next he introduces the notions and names of colors, forms, shapes, etc., and when they have acquired a sufficient stock of nouns and adjectives, the commoner verbs of motion, fear, fondness, etc., are added, and similarly fixed in the learners' memory by the aid of appropriate pantomime and pictures. The ice being thus broken, and the most necessary words having been acquired, the pupils are gradually drawn into conversation and induced to put questions to the teacher. Their numerous mistakes are promptly corrected, and they are encouraged to repeat their utterances in the proper form. Incidentally a great deal of useful knowledge is imparted, such as facts of history, and natural science; and not the least important thing learned is elegance of manners, with ease and confidence in speaking, by reason of their imitating a polished and scholarly European.

It is readily seen that this kind of instruction puts life into the language and is highly fascinating. The work can be indefinitely expanded to meet the most exacting requirements. Juvenile pupils are usually so engrossed in the pleasurable lesson that they are unconscious of the lapse of time, nor are adults less thoroughly entertained. Experience has shown that boys of twelve years, when taught by the natural method, learn in one year to speak a foreign language as well as they do their mother-tongue. Indeed, it has been observed that in the hands of a brilliant teacher, they can acquire a polish of phrase and a selectness of expression such as their homes offer no facilities for securing in English.

However, appearances are occasionally deceptive, and, in estimating the benefits of such a year's work, it must be remembered that a boy makes up in volubility for what he lacks in vocabulary, and that his command of words will necessarily always correspond with his stock of ideas. Whether the fluency remains after the instruction has ceased, must be determined by an examination of individual cases. The prevailing opinion is that the benefits will last through life and are worth far more than they cost.

In the households of the European nobility and aristocracy, where the children from their earliest years are taught by native governesses and tutors to speak several languages with equal facility, there is no cessation of conversational instruction, no diminution of oral practice. For these pampered pupils the word *mother-tongue* has no meaning that is illustrated by anything in their experience. What others obtain by unwearying application during a limited time, they grow into by incessant practice covering their entire youth. Their proficiency cannot, therefore, be taken as a criterion of what may be expected of the "natural method" in the United States.

The various other "methods" of language-teaching do not come within the purview of this paper. The best of them are chiefly serviceable in providing a wide range of phrases and idioms. Some undertake to give an accurate indication of the pronunciation by means of English phonetic equivalents, or figured letters whose phonetic values are determined by reference to a table of key-words separately explained. When the learner cannot obtain the aid of a teacher in his home it will be necessary for him to go to the nearest city where, for a few weeks, proper instruction can be had for mastering the key-words and the exceptional difficulties which at the outset confront and embarrass all beginners.

If one only desires to translate, the pronunciation of modern languages can be totally disregarded; but this will diminish the enjoyment which comes from understanding them. The Hungarian patriot Kossuth first studied English this way, reading Shakespeare while in an Austrian prison. But afterwards he had oral practice and developed a lofty and impassioned eloquence, but little marred by the strong foreign accent. These remarks about methods, teaching, etc., may fitly conclude with an allusion to a fact which must have puzzled many.

Dr. L. Sauveur, probably the ablest living exponent of the "Natural Method" of teaching languages, has such a defective English pronunciation that his lectures in that language are almost unintelligible to those who hear him for the first time. Since he claims that his method will impart to adults a correct pronunciation in six weeks, one is tempted to ask why he has not seen fit to try its efficacy in his own case, during the twenty-odd years of his aggressive warfare on other methods.

For the information of those who may wish to know something about the characteristic peculiarities of German, French and Spanish, a brief sketch of each is subjoined.

GERMAN.

The English-speaking learner of German is very agreeably surprised to find that he can recognize, either by sight or sound, a very large number of words. For example, *Hammer*,* *Hand*, *Gold*, *Land*, *Finger*, *Name* are spelled, and *Fisch*, *Haus*, *Maus*, *Gras*, *Glas*, *Schuh* are pronounced, exactly like their English equivalents. A still larger number of words are sufficiently alike in the two languages to be easily learned, *e. g.*, *Stein* (stone), *Schiff* (ship), *Wasser* (water), *Milch* (milk), *Kalb* (calf). Examples of adjectives are *grün* (green), *blau* (blue), *gut* (good), *alt* (old), *dick* (thick), *tief* (deep); of verbs, *schwimmen* (swim), *hören* (hear), *sehen* (see), *fühlen* (feel), *singen* (sing). This resemblance is due to the kinship of English and German, and a very superficial acquaintance with the laws which govern the changes of sounds in the two languages, will enable the learner to trace many curious and instructive analogies. Thus "shirt" and *Schürze* (apron), "dumb" and *dumm* (stupid), "starve" and *sterben* (to die), "deer" and *Tier* (animal) are all akin.

In its power of forming self-explaining compounds, German far surpasses English. For example, instead of borrowing from foreign languages such words as "oxygen," "nitrogen," "soporific," "sanctimonious," the German forms them from its own resources, compounding simple words which describe the thing or quality. This gives in the cases just cited words whose literal rendering is "sour-stuff," "stifling-stuff," "sleep-bringing," "seem-holy." †

Amusing examples are *Fingerhut* (finger-hat, *i. e.*, *thimble*), *Handschuh* (hand-shoe, *i. e.*, *glove*), *Baumwolle* (tree-wool, *i. e.*, *cotton*). There are many perfectly intelligible German compounds, which no single English word will render, *e. g.*, *engelrein* (angel-pure), *himmelhoch* (heaven-high), *menschenleer* (people-empty, said of deserted streets, etc.), *übernächtig* (over-night-y, as it were). This last word, when applied to persons, means "weary with watching all night." It is the exact equivalent of the Spanish word *trasnochado*.

German spelling is nearly phonetic, that is, words are spelled as they sound. This feature offsets in part the labor of memorizing its numerous inflections and learning its complicated syntax. Some idea of both may be formed by examining the following sentence from Grube, in which the inflectional endings are italicized and the parts of the verbs printed in full-face type:

A*m* 10 November 1483 **ward** zu Eisleben ein*em* Bergmann*e* Hans Luther ein Söhnlein **geboren,** das a*m* folgend*en* Tag*e* **getauft** und Martinus **genannt wurde.**

Literally: "On the 10 Nov. 1483 was at Eisleben to a miner, Hans Luther, a son born who on the following day baptized and Martin named was."

FRENCH.

Although English is essentially a Germanic language, both in structure and vocabulary, still it has incorporated and assimilated a considerable amount of French. The words introduced during the first few centuries after the Norman Conquest (1066) have changed the most in spelling, but with very few exceptions all have changed in pronunciation, so that the English-speaking learner's ear must undergo special training before it can recognize words already familiar to his eye.

There are more than 1000 nouns in *ion* that are spelled alike, or nearly so, in both languages, (*e. g.*, *confession*, *profession*, *action*, *proclamation*); 40 nouns in *al* are alike (*e. g.*, *animal*, *journal*); 250 adjectives in *al* are identical, or nearly so (*e. g.*, *brutal*, *principal*); about 200 adjectives in *eux* have *ous* in English (*e. g.*, *fameux*, *ambitieux*); over 200 adjectives in *if* have *ive* in English, which is also the feminine form of the French adjective (*e. g.*, *actif*, *instructif*). But it is unnecessary to multiply examples. The two languages have, perhaps, 3,000 words which are spelled alike, or nearly so, but pronounced differently. This accounts for the fact that many can read (*i. e.*, understand printed) French without being able to comprehend it when spoken.

* German nouns always begin with a capital letter.

† Sauerstoff, Stickstoff, schlafbringend, scheinheilig.

The language has no cases, but uses prepositions to express case relations, thus "the man's book" is rendered in French by "le livre de l'homme" (the book of the man). Nouns usually form their plural by adding *s*, and are either of the masculine or feminine gender, grammatically. French and German genders are equally illogical, and constitute one of the chief difficulties in acquiring these languages. Adjectives vary for gender and number and more frequently follow the nouns they qualify. A few regularly precede, and some have different meanings according as they precede or follow. Thus *un pauvre homme* signifies "a poor (*i. e.*, pitiable) man," and *un homme pauvre* means "a poor (*i. e.*, indigent) man." It requires much oral practice to insure the English-speaking learner's accuracy in placing French adjectives.

The verb, as might be expected of a language derived from the Latin, is far more difficult than ours, and has niceties and shades of meaning unknown to English. The use of the subjunctive mode to indicate doubt and uncertainty of statement is becoming more and more restricted in English, and thereby the language is losing in clearness, whereas French makes as much (and nearly the same) use of this mode as does the parent Latin, and in this respect is distinctly superior to English. Moreover, the so-called modal auxiliaries in English (can, could, may, might, must, etc.) are so lamentably deficient in tense-forms, that we are sometimes obliged to have recourse to a variety of cumbrous makeshifts in order to bring out the meaning of the complete French verbs which correspond to them. Thus *je puis* = I can, *je pourrai* = I shall be able, *je pouvais* = I could (was able, during a certain time), *je pus* = I could (was able, at a certain time), *je pourrais* = I could (should be able), etc.

A consonant is usually silent at the end of a word, unless the next word begins with a vowel sound. This, together with a peculiar evenness of syllabic stress and sentence-emphasis, makes it hard for a learner to understand a sentence composed of words well known to him when pronounced singly.

In the matter of spelling French is not so easy as German, but much easier than English. It has many sounds peculiar to itself, and in many instances different words are sounded alike, *e. g.*, *pain* (bread) and *pin* (pine) are both pronounced like the "pan" of the English word *spank*.

The language is characterized by sprightliness, clearness and precision, and makes up in these respects for its lack of vigor and emphasis, as compared with English and German.

Spanish.

The kinship of French and Spanish is much closer than that of English and German, and their similarity in vocabulary and structure is correspondingly greater. Both are descended from the corrupt Latin which was the current speech of the Roman provincials, but Spanish has diverged less from the parent type, and in sonorous dignity and rhetorical effect is perhaps the only modern tongue which has little to lose by a comparison with literary Latin.

The French words cited in the preceding section are, in Spanish, *confesion*, *profesion*, *accion*, *proclamacion*, *animal*, *jornal*, *brutal*, *principal*, *famoso*, *ambicioso*, *activo*, *instructivo*, all but "jornal" being exact equivalents. The words "le livre de l'homme" (the book of the man) are rendered by "el libro del hombre" (in Latin, "liber hominis;" in German, "das Buch des Mannes"); "un pauvre homme" = "un pobre hombre," and "un homme pauvre" = "un hombre pobre, the expressions differing in meaning as in French;" "pain" (bread) = "pan," and "pin" (pine) = "pino."

The adjective more usually follows the noun it modifies, and varies for gender and number. There is no inflection for case relations, prepositions being used instead, and plurals are formed by adding *s* or *es*. Spanish has more verb-forms than French, but in the uses of the modes and tenses the two languages correspond very closely. The possession of two verbs meaning "to be" is anomalous, but gives the language remarkable precision. One of them, *ser* (derived from the Latin *sedere* = to sit) is used when a permanent or characteristic quality is to be indicated; the other *estar* (from the Latin *stare* = to stand) expresses a temporary or transient quality or state: *e. g.*, *el hielo es frio* = ice is cold (all the time); *el agua está caliente* = the water is hot (at this moment). For-

eigners sometimes make grave mistakes in the use of these verbs, *e. g.*, *ella es cansada* = she is tiresome, while *ella está cansada* = she is tired. Obviously the two expressions are not interchangeable!

Unfortunately Spanish is as illogical as French in the matter of gender, all nouns being regarded as either masculine or feminine. Still the task of memorizing is somewhat lightened by the fact that certain final syllables determine grammatical gender.

The collocation of objective or governed pronouns is as confusing as in French, and the habitual omission of subjective ones often renders a sentence unintelligible to a foreigner not accustomed to guessing at the subject of verbs. In many respects, however, Spanish exhibits a marked superiority over French: it has no silent letters, and none of varying value; the words are spelled exactly as they sound, and when the learner knows the combinations of letters which are associated with the various sounds, he has mastered Spanish spelling, for it is strictly phonetic. If he knows certain words singly, he can distinguish them in any context, for they are never clipped or slurred over.

The predominance of nasal sounds in French makes it seem trivial in comparison with the sonorous Spanish: it is as hard to make a French sentence seem grand as it is to make a Castilian one sound commonplace! In abundance and sweetness of vowel sounds it vies with Italian, while in the richness and variety of diminutive and augmentative suffixes to indicate size, fondness, depreciation, etc., Spanish excels all languages, ancient or modern.

The American business man, having resolved to learn a language, should give to it a large part of his leisure, letting the study and practice constitute his chief recreation. He can easily form the acquaintance of cultivated foreigners having kindred pursuits and congenial tastes, and their companionship in walks, drives, bicycle tours, or even on the street-cars, will afford opportunities for conversational practice. He will not be long in raising himself above the mechanical repetition of memorized phrases, and will unconsciously begin to *think* in the new language. His further progress will possess all the charm which attends increased proficiency in shooting, yachting, mountain-climbing, etc. Thus he experiences none of the irksomeness of a task, and is pleasantly led on to seek invigorating diversion in fields altogether outside of the domain of dollar-getting.

It is not true that a man's mental powers are to be gauged by the number of languages he knows; but it is a fact that a linguist is brought into contact with things calculated to push his intellectual horizon far beyond the ordinary limits.

It is no small thing to know what other literatures contain, what other nations have accomplished, and such knowledge comes best through language-learning. As the study of Latin and Greek affords the only means of reaching a just appreciation of the civilizations antedating Christianity, so the study of modern languages furnishes the only key to the larger possibilities of the present. W. F. FLEMING.

[The most satisfactory small dictionaries of French and German are Heath's (D. C. Heath & Co., Boston, $1.50 each). They do not give the pronunciation, but are later and better than the Adler (German) and Spiers and Surenne (French) dictionaries of three times their size and price (D. Appleton & Co., N. Y., each $5.00). These two, and Velasquez's Spanish dictionary, have undergone no revision for fifty years, and will doubtless continue to be printed from the same old plates till Americans cease buying them.

There is no good Spanish-English dictionary of the Heath pattern to take the place of the antiquated Velasquez work.

Lopes & Bensley's appears to be little more than a French reprint of Velasquez. Neither indicates the correct use of the graphic accent as authorized by the Spanish Academy.

As soon as one is able to read fairly, Sanders' German dictionary and Littré's French dictionary, for the use of Germans and Frenchmen, respectively, will be the best works on which to found a thorough knowledge of those languages. Less than half as large as the showy and pretentious "Century Dictionary," which English-speaking students have in the main to depend upon for their own language, they furnish more and better illustrative passages.

The best grammars for reference are Whitney's for French and German, and Ramsey's for Spanish (all by Henry Holt & Co., N. Y). The last named is the latest grammar of Spanish, and the only considerable one in accord with the rulings of the Spanish Academy on the use of the graphic accent. Tolhausen's Spanish-German dictionary conforms to the last edition of the Spanish Academy's dictionary, but is marred by omissions, bad typography, poor definitions, and misspelled words — German as well as Spanish.]

WHO WERE THEY—THE "FOILS" OF HISTORIC STORY-TELLING?

WHILE we have to thank the old chroniclers and historians for much, it must be confessed that, at times, they were very careless. Incidents of interest we have in plenty, and the names of the great ones who figured in them are preserved, but the foils, without whom the story would be valueless, have been allowed to drop into unknown graves. Nothing is known of them, not even their names. Their status in life we have, but that is all. To the reader of the present day, who is accustomed to peruse the minutest details in the careers of men who have been suddenly lifted into notoriety by crime, politics, or labor, this is positively exasperating.

Mr. Justin McCarthy, whose work was interestingly characterized in the last issue of SELF CULTURE, enjoys the unique honor of having been the first man to write history with the quick-moving pencil of the newspaper reporter. He never misses a detail. Even the boy Oxford, and Francis, the crack-brained, who assaulted the Queen, are enshrined in the fascinating pages of "A History of Our Own Times." The author knew what his readers wanted, and he never omitted to chronicle even the "small beer." When we look back, however, we must exclaim at the slovenly manner in which the older writers prepared their books. The student of achievement and great deeds is perplexed now-a-days when he ransacks the histories in vain for features which do not appear. We all remember the touching story of Alfred the Great and the cakes. If the poets failed to immortalize that distinguished monarch, in heroic stanzas, until the other day, the historians certainly have not neglected him. His remarkable career, his thirst for knowledge of every sort, his rare powers as a minstrel, his genius, his valor, his Christianity, his love of country, his marvellous gifts in short, have occupied the pens of many. In glowing prose his virtues are set forth. Of course, the tale of the burning cakes, which many regard as the turning-point in Alfred's career, is told and re-told with unction and close fidelity to facts.

The historians are agreed that it was in the forest of Athelney that the King received his first lesson from the lips of a peasant's wife. The late Thomas Hughes, author of "Tom Brown's School Days," in his delightful monograph on "Alfred the Great," has even preserved the exact words which the neat-herd's wife used on the memorable occasion. "Drat the man," cried the frugal but angry spouse, "never to turn the loaves, when you see them burning. I'ze warrant, you're ready enough to eat them when they're done." It is also carefully explained that though the wife knew not the identity of her royal guest, her husband had been entrusted with the weighty secret. He was a faithful subject, and though his better-half was sharp-tongued and endowed with all the keen curiosity of her sex, he never told his partner the name of the inmate of their humble roof.

Now, it is just here where the early chroniclers, who have saved this beautiful legend from destruction, have fallen short in their professional work. Without the neat-herd, and, particularly, without the neat-herd's wife, one of the most important events in the history of Alfred, — sometimes written Ælfred, — would not have occurred. The location of the hut, the scene of the disaster to the cakes, we know was in Selwood. We are also quite satisfied that while the neglected loaves were being reduced to cinders, the young monarch was absorbed in thought, and that while his fingers were busy in repairing his bows and arrows, his mind was running backwards and forwards to past misfortunes, and to thoughts of the future. Even the odor which must have arisen from the batch, did not cause him to turn his head. With shrewd circumstantiality, we are told how it was the neat-herd's wife herself, who was the first to discover the calamity, and the outflow of impatient objurgation was, naturally, not long in following. We are even made familiar with the feelings of the King, and to his credit, it must be said, he received his well-merited rebuke kindly, and without making a royal fuss over it.

And yet, despite the care which the historians have taken to gather these facts, the name of the herdsman is un-

known, and he sleeps somewhere, anywhere in old Selwood, in an unmarked grave. His wife, too, who was such a prominent actor in the drama, and who performed one of the speaking parts, has left no trace of her origin, her name and date of marriage being alike omitted from the record. The *dramatis personæ* included but three, the disguised king, the leal-hearted neat-herd, and the painfully disturbed housewife. The sovereign's disguise was penetrated; the others, who wore no disguise, and could, therefore, have easily been recognized and identified, cannot be discovered, and no one's memory holds them in ken. And this is all the more unpardonable, when that rough and untoward churl, Denewulf, the swineherd, is made conspicuous by oft-reiterated reference, and his deeds, though trivial, are set forth with great prominence. Can it be that the rude press-censor of those early English days allowed prejudice to overcome his sense of justice, or are the discarded ones merely innocent victims of cold neglect? The real truth may never be known.

From whatever cause, the fact remains that a brilliant page of history is marred by omissions, which, at this remote date from the event, cannot be restored. We will never know the names of the reticent peasant, and the woman who rebuked the lord of Wessex, in the humble hut, over a thousand years ago.

It is indeed, singular to note, how prone the older historians were to omit the connecting links in the chain of evidence, which they left to posterity. The barons who forced King John to sign Magna Charta, we know to a man, though we may not be able to decipher their chirography. But the Jews, whose teeth he extracted when demanding loans, we may never know by name. And yet, without the aid of the usurers, John could never have carried on affairs at home or abroad. His unwilling money-lenders saved the situation, but notwithstanding the tortures they endured, their cognomens cannot be found in the list of martyrs of that despicable ruler's reign.

And then, again, there is that charming object-lesson, the story of Canute and his sycophant courtiers. They flattered him up to a point, which tickled the shrewd Dane's fancy so much, that he resolved to try the effect of an experiment. You are the grandest monarch in the world, said his followers, in so many words. You can even command the services of the waves, and the great waters of the sea will obey your every wish. These courtiers are known now only as lay figures. They may have been dukes or earls or barons; probably all three orders numbered them as members. But their names, have, somehow, been suppressed, and all that we know of their personal history is the fact that one day the king commanded his chair to be set on the seashore. He sat upon it, pleasantly chatting to those who pressed around him, apparently unmindful that the tide was coming along swiftly in his direction. His Majesty, in a loud voice, bade the waters recede, and called on them to obey the orders of their lord. He even pretended that they would retire, and submit themselves to his will. But when they rose and wet his royal feet, he calmly moved off, and cried out to his embarrassed courtiers, whose names we are not in a position to give, "the power of kings is but vanity. He only is king who can say to the ocean, *thus far shalt thou go and no farther.*" And, adds the chronicler of that day, "he never bore his crown again."

The absence of the names of the courtiers, we repeat, robs the story of a very salient feature. Fortunately, however, the facts have been substantiated, though it would have been wise to preserve the names of the king's attendants, the eye-witnesses of a scence, which conveyed so admirable a lesson in morals and common sense. Many a true story has suffered for the want of endorsing testimony, but this one has escaped challenge on that score.

Many more examples of the woful neglect by historians of the foils who have made incidents in the careers of the great possible might be cited, but one other will suffice. There is, for instance, that popular episode in the life of Napoleon. Letter-press and the engraver's art have told the story of the weary sentinel discovered sleeping at his post, on the very eve of a battle, by the little Corporal when going his rounds. The Emperor took the man's musket and mounted guard himself, while the warrior on the ground remained exhausted, and rooted to the spot. When he awoke, his frightened eyes be-

held the well-known form of his sovereign and general. He knew his fate was death. But Napoleon, taking in the situation at a glance, pardoned the delinquent, and the soldier's life was saved. The features of the guardsman appear in the pictures by artists who never saw him. Napoleon, if he ever knew the man's name, did not reveal it, and another important foil thus disappears from history, leaving for publication the identity only of the chief actor in the scene. The story is a pretty one, and it represents the great Captain in a most magnanimous mood. But the name of the party of the second part is unknown, and so is the name of the old guardsman who wore a bullet in his fob instead of a watch.

Now what would become of the good stories if there were no foils? They are the forgotten, the unremembered, the neglected, the blighted beings whose presence in the nick of time enables this or that great man to round an incident. They are used as "supers," and then cast aside. Names they do not appear to have ever had. But what a pity it is that not one of the tribe has ever been able to tell the story from his own point of view! Even that small comfort is denied him.

GEORGE STEWART, D.C.L.

THE ROMANCE OF THE EAST:

AN INTERVIEW WITH AN EMINENT ASSYRIOLOGIST *

ONE of the most fascinating chapters in the history of research is that which deals with the revelations made by the monuments of Egypt, Assyria, and Babylon. The silent, hoary East has of late been speaking through the mouths of men who were laid to their long rest "beyond" the "beyond" of history. As the chattering Arabs of today, digging among the mounds which cover the now deserted Babylonian plains, reveal to the eager eye of the archæologist clay tablets which have lain there silent during the long centuries, there rises before him a vision of a people who lived and loved, of a city which teemed with busy life, and of a civilization as high as that of the then unborn Imperial Rome, which existed centuries before the portals of history were opened, but which have passed away and left not a rack behind. As he investigates he finds that the history of humanity goes back farther than was ever dreamed of. The old world has a "past" of which it need not be ashamed, but of which the only record lies buried in its dust.

Of those who have pointed out the significance of the many wonderful discoveries of late years, Prof. A. H. Sayce, who occupies the only chair of Assyriology in England, is one of the chief. The greater part of the year he spends in a *dahabiyeh* on the Nile. This is a combination of a yacht and a house-boat, fitted up for a permanent residence, and is the largest boat of its kind on the river. It is amid the old-world surroundings of the Nile that Prof. Sayce writes those innumerable books which he devotes to the subject which is so dear to him. There, with a large library about him, he is able to do his work without the interruptions which are almost unavoidable in the Babylon of the West. It was not, however, to Egypt that I travelled to find the professor, but to another old-world spot—Queen's College, Oxford, of which he is a Fellow.

"That goes back to my boyhood,"

*Through the courtesy of a friend of SELF CULTURE, we are enabled to publish in these pages an interesting account of an interview which appeared in an English source, with Prof. A. H. Sayce, LL. D., who holds the chair of Assyriology at the University of Oxford, and was for many years assistant to Prof. Max Müller as lecturer on Philology. Prof. Sayce is one of the great scholars of the time who have been engaged in the East in deciphering the "records of the past" in Assyrian, Babylonian, and Egyptian fields of discovery and research. He has had great success in bringing to light a number of clay tablets, inscribed in cuneiform characters, and recording occurrences at Nineveh, in Egypt, and in the Hittite country, and by his vast linguistic knowledge has been able to decipher them and appraise their value as endorsations of Holy Writ, as well as records, of a peculiarly interesting character, illustrative of the early history of the race. The interview will be of value to those especially who know Prof. Sayce's writings, and the light he has shed on biblical subjects deciphered from ancient monuments and other records of early Oriental nations.—ED. S. C.

replied the professor when, seated in his college rooms, I asked how he first came to be interested in archæological research. "I always had a fancy for it; it was ingrained in me. When I was a small boy my lungs were not strong, and I had to pass a good deal of the winter in the house. I was obliged to amuse myself as best I could, and took a great fancy to the forms of the letters in the Hebrew Bible. These I learned, and the result, I suppose, was that I came to have a love for the East and Oriental things. When I was a schoolboy I read Layard's Travels with great delight, and from that time forward I date my interest in Assyriology. Then I wished to know something of cuneiform characters and their meaning. But I was not able to take up the subject seriously until I had finished my Oxford work and taken my degree. When I was an undergraduate I always had a great liking for the study of languages, and my lungs still being bad, I was obliged to spend my winters in the south of France and north of Spain. That led me to live among the Basques, and to take an interest in the Basque language. As soon as I was free from my Oxford work I devoted myself to my special pursuits, and published an Assyrian Grammar for comparative purposes, in which I endeavored to compare the grammatical forms of Assyrian with those of the other Semitic languages, and as far as possible to trace the origin and development of them. Then I devoted myself to the study of comparative philology."

Prof. Sayce's work has now extended over thirty years, and during that time he has helped to build up what we now know about the Assyrian language and the history of Babylon. And his work is not yet done. A few days after I saw him, he returned to his vessel on the Nile, and there proposes to write four new books. One will be upon the history of the Hebrews in the light of archæology; another will deal with the religions of the ancient East; and a third will be on the social life of the ancient Babylonians.

The professor has witnessed some strange scenes in his travels. He has himself been attacked by Bedouins when travelling in Palestine. But one of the most curious sights he saw was at Gaza, in the south of Palestine. "While staying there as the guest of a Mohammedan family"—so Mr. Sayce began the story—"the festival took place of the grandfather of Mahomet, who was supposed to be buried in one of the mosques in the town. As I was considered to be a member of the family, I was taken to the festival. It was a very curious sight, for the whole of Gaza was there under the dark blue sky. There was no moon, but the atmosphere was very clear, and the great court of the mosque was lit up with innumerable lights. What struck me most was the way in which a spirit of religious ecstasy fell on the people. They were not professional dervishes, but simply the townspeople. But one by one a strange spirit of ecstasy fell upon them, and I realized what was meant regarding Saul when it was said that a sort of afflatus came upon him. These people formed circles and moved to a certain chant, with their eyes open, but in a state of trance. Then they fell to the ground, and after a time some began to torture themselves; I saw them putting skewers through their skin and yet no blood came out. Some began to stand on braziers of burning charcoal, and apparently without hurt. They were in a cataleptic state, brought on by religious excitement. I have seen the same sort of thing performed in Algeria, but there it is impossible to tell how much of it is imposture."

I was anxious to hear something about the very interesting discoveries with which Prof. Sayce has been associated, so I asked him to tell me some of the results of recent research.

"As far as our researches among the monuments of Babylon, Assyria, and Egypt are concerned," he replied, "they have opened up a new world undreamed of a few years ago. They show that the history of mankind goes back to a very remote past, and that civilization was then quite as high as that of Imperial Rome or the civilization of Europe at the time of the Renaissance, if not higher in some respects. They have also shown how much there is still to be discovered. After all, what we have found is only the beginning of what we shall find. It is no longer possible to say, as in the early days of Oriental research, that such and such a thing could not have been. The population of the early East was highly cultured and highly

literary. Both in Egypt and in Babylon a large portion of the people seem to have occupied their time in reading and writing."

"What has actually revealed these hitherto unknown facts?"

"The monuments which have been found in Egypt and Babylonia have revealed them in part. These are literally covered with writing. Even the smallest articles of daily use have been found covered with inscriptions. The revelations are also partly due to the discovery that the old cities of the East had very large libraries of books. And some discoveries made a few years ago at Tel-el-Amarna in Egypt — where a large number of letters on clay tablets were found — proved that in the fifteenth century before the Christian era the whole educated population of the East from the Euphrates to the Nile were engaged in writing letters to one another. This correspondence was going on actively in a language and form of writing which belonged only to the Babylonians. Those, therefore, who wrote in this language must have studied and learned it as we learn French. Hence there must have been schools in which the language and script of Babylonia were studied all over Western Asia.

"Only last winter a discovery was made in the extreme south of Egypt, showing that papyrus books were written in the very early days of Egyptian history. As regards the Babylonian libraries, they were equally ancient and very numerous. Every great library had its clay books. A year ago, at a place called Tello, in South Chaldea, a French excavator discovered a library which was formed three or four centuries before the birth of Abraham, and which, he concludes, had contained thirty-three thousand separate clay tablets or books on all kinds of subjects. He found them arranged in shelves, piled one upon another. They had probably been overwhelmed by the fall of the building in which they were placed. Many of these clay tablets are now in Constantinople. About ten thousand were stolen by the Arabs, and some are being sold in England. The tablets are mostly written in Accadian, a language which is still imperfectly known."

"What further excavation promises to yield the most important results?"

"What is specially needed now is excavation on the site of certain old cities in Palestine, where it is certain we should find early libraries of clay books like those I have spoken of. For instance, there is one place I should like to excavate, and that is Gezer. There we know, from the cuneiform inscriptions, that there was a library in the Canaanitish days, and I believe a number of inscribed clay tablets would be found. No doubt these would throw much light on the history of Palestine.

"Then there is another thing which is very much needed. One of my discoveries was that of the Hittite Empire. Certain monuments found in Asia Minor were the work of the Hittites, and they possessed a peculiar system of hieroglyphics. Their empire extended from North Syria through the greater part of Asia Minor. One of the Hittite cities, where monuments are known to exist, is now called Bor. It is the ancient Tyana, in the great mound of which Hittite monuments have been found. This is a mound which it would be very desirable to excavate as soon as facilities for doing so can be given; because there, in all probability, we should find monuments which would throw light on Hittite history. There, too, we might find inscriptions in two languages — Hittite and Assyrian — which would enable us to decipher the Hittite language."

"And what has been the result of these discoveries so far as the Bible is concerned?"

"I believe that in the main they establish the traditional as opposed to the modern critical view of the antiquity and credibility and historical trustworthiness of the Old Testament records — more especially the Pentateuch. I do not mean to say that in all respects the old views we had upon the subject were correct, but that on the whole the Old Testament records seem to have been vindicated by the discoveries we are making. I have come to disbelieve thoroughly in the so-called critical view of the composition of the Pentateuch. I believe that substantially it belongs to the Mosaic age, and I see no reason why it should not have been written by Moses. The book has undergone certain alterations and changes, but substantially it is the work of the Mosaic age and of Moses himself. It contains extracts from earlier documents, more especially in the Book of Genesis; and some of these earlier documents can

be shown to have been written and to have been contemporaneous documents, in the Babylonian language and cuneiform characters."

"Then you do not adopt all the conclusions of the Higher Critics?"

"No; the more archæological facts come to the light the more I am inclined to mistrust their conclusions. The Higher Criticism rests entirely upon what is called the literary analysis of the Bible, the division of the writings of the Old Testament among authors whose works are distinguished from one another by differences in style and in the use of words and grammatical expressions. Experience shows that any conclusion of that kind must be extremely precarious, because it is next to impossible to successfully analyze written documents upon a merely philological basis, even in the case of languages well known and still spoken. Take, for example, the case of Besant and Rice, the novelists. We know how Besant writes, for he has written books by himself since Rice's death; but although these novels are written in English, which we are supposed to know well, there is not a single English scholar who could undertake to say in the case of one of these composite novels where Besant begins and ends and where Rice comes in.

"If that is the case with modern English, how is it possible for a European scholar of the nineteenth century to determine who were the authors of an ancient Hebrew work which is supposed to have been written by several persons? It must be remembered that our knowledge of Hebrew is very imperfect. We have only a fragment of Hebrew literature to begin with. That fragment has come down to us through the medium of copyists who have often corrupted the text. There are words in the Old Testament the meaning of which is unknown or doubtful, and under these circumstances it seems to me that what we cannot do in the case of a modern English work cannot possibly be done in the case of a book two thousand or three thousand years old. I entirely mistrust the conclusions of the Higher Criticism in so far as they mean the breaking up of the text and the distribution of it among various authors, each of whom is clearly and distinctly mapped out and defined by the critics. At the same time, the Higher Critics have cleared away a great number of misconceptions and false ideas, and directed attention to points which had been overlooked. Above all, they have done a great deal in trying to understand what the text actually means."

Professor Sayce thinks that monumental evidence is on the side of the critics in relation to the Book of Daniel. "The general result of it," he says, "is this: the historical facts as we know them from the contemporaneous records are irreconcilable with the statements found in the historical portions of the Book of Daniel. I therefore see in those portions examples of what we find in the Talmud, — what the Jews called 'Haggadah,' — that is to say, legends which we use for purposes of religious and moral instruction."

"In what way do you define the special inspiration of the Bible?"

"Judging from what one reads in the newspapers and magazines, educated opinion in England has undergone a great change in the way in which the Bible is regarded. Instead of being considered as verbally inspired, authoritative in every word, it is now considered to contain the word of God, rather than to be itself the word of God. We believe, at any rate, that in the Bible we have the special revelation made by God to man, but made in the form of literature; and that it is the spirit that underlies the form, and not the form itself, which contains the message of God's will. As you know, the idea of inspiration has never been authoritatively formulated. The English Church knows nothing of the inspiration of a book. In the liturgy the only inspiration spoken of is the inspiration of the hearts and souls of men by the Spirit of God. What we mean by the inspiration of the Bible is that in it we have the will of God revealed to us. That will is revealed by the general spirit of the Bible, and not by the individual words or phrases."

One is often led to wonder whether, with the progress of the years, an equal measure of inspiration might not be given to the men of to-day, and whether other books might not be produced which might be ranked with that wonderful Oriental literature which we call the Bible.

When I put these questions to Professor Sayce, he answered, "All things

are possible, but I do not see any probability in this view. And speaking as a Christian, I should say that men will not be inspired in the same way as they were of old." And when I asked how it was that Israel, without what we call the "benefits of our modern civilization," became the possessor of that which some say is denied to us, he replied that although man may have progressed intellectually he has not maintained the spiritual altitude of Israel.

"In what would you say lies the difference between the literature of the Bible and other literatures?" I queried.

To which the Professor replied: "I have read a good deal of the other sacred books of the world, and, even putting aside the Christian view, I fail to find in them the uncompromising belief in one immutable and moral Creator of the universe which I find in the Bible. I do not find in them that spirituality which is able to adapt itself to the enlarging needs of men. When one compares the account of the creation in Genesis with those on the Assyrian monuments, the moral difference between the two is most striking. On the one hand we have a stern monotheism; and the fact that the whole universe was made by God alone is emphasized and brought out in the clearest relief. Whereas, when you turn to the Babylonian account, which otherwise resembles it, the tone is entirely different. There you have nothing but a great antagonism of rival divine forces, which finally produced the world as we know it. There is no lofty spiritual tone."

"Supposing all recent copies of the Bible were destroyed, what is the oldest and nearest to the original MS. which one could copy from?"

"The oldest known MS. of the Old Testament is a Hebrew text of the minor prophets dating from 916 A. D. That was found in the Crimea in Russia, and is the oldest Hebrew MS. of the Old Testament we have. The oldest MS. of the Pentateuch is now in the British Museum. There are older MSS. of the Greek version of the Old Testament which was contained in the Septuagint, and one exists of the fourth century A. D. But who knows what we may find? It is possible that we may come across some old Hebrew texts which are not included in the Canon. The Old Testament, as we have it, is only a fragment of the vast quantity of Hebrew literature which once existed, and from which the Old Testament is compiled. Only a year or two ago fragments of the Greek version of the Psalms were discovered among the rubbish-mounds of an ancient Egyptian city, which were probably written in the second century of our era. Egyptian tombs have also yielded portions of lost apocryphal books, such as the apocryphal Gospel according to St. Peter, which seems to have been written in the second century.

Fragments of heretical books have also recently turned up, and the latest discovery is that of a Gnostic work, hitherto known only from its confutation in the pages of St. Irenæus. Even Hebrew MSS. have been found in Egypt, and only this year I have brought to England some ancient pages of what has proved to be the lost Hebrew original of the apocryphal Book of Ecclesiasticus. They are now being published by the University of Oxford, and are likely to correct several of the ideas at present current among textual critics of the Bible. Thus they show that classical Hebrew could still be written in the second century B. C., and afford indirect proof that where the Massoretic and Septuagint texts of the Old Testament differ from one another, the Massoretic is the more likely to be correct."

In connection with the possibilities of future research it is well to remember that others besides the Armenians have to gain by the deposition of the Sultan of Turkey. All the historic plains of Babylonia and Assyria and Palestine are under his hateful rule; and for some time past he has been disinclined to allow any European to explore within his dominions. In Egypt, however, Professor Sayce has been able to bring to light many inscriptions never found before. In the winter before last, at El Kab, in Southern Egypt, he discovered a number of inscriptions of the oldest period of Egyptian history — the sixth dynasty.*

P. L. P.

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* See the article, by Prof. Sayce, on "Inscriptions, Cuneiform & Semitic," in the Encyclopædia Britannica, Vol. XIII., pp. 114–118; also, the articles in the same source on Babel, Babylonia, Cyrus, Darius, etc.—ED. S. C.

BEGINNING AT HOME AS A REFORMER

EACH man's own soul is the great fact with which that man must primarily concern himself. Back of all labor for others, all writing, all forms of unselfishness, back of all efforts to reform or improve the mass of men or one's own children, lies the prior duty of reforming, elevating and strengthening one's self. Personal worth is not only an individual adornment, but is the one great basis of all public and national worth, and must be present in large degree before the calm theorist or the agitated reformer can even begin to affect others permanently.

In these days of warm speech and honest endeavor on vital public questions, by men thoughtful and men more active than anything else, speech and work often throbbing with the passion of unselfishness, should we yet not sound a truce long enough to be sure that we are as well qualified as possible for work?

Ever before the man eager to do lies the danger of forgetting that good fruit cannot come from a diseased tree. What are you, reformer, socialist, clergyman, writer, that you venture to reach out to others with your benevolent schemes, your earnest, honest words, and try to leave a large impress on the seal of public opinion? Is the seal — the individual — worthy? Are you in love with justice, and in love with her deeply enough to perceive that she absolutely needs no one man — no, nor any club of men — in order that her eternal and immutable principles may triumph? Do you after all, away down in your heart, feel calmly sure that you are not infallible, that you are not perfect, that the world would not suffer irretrievable loss if you should die? We know you will die sometime: what will the world do then? Are you working not for fame, nor for so many dollars a page or a column, but for righteousness and eternity? Are you willing not to work at all in your chosen field if Duty demands your strength elsewhere? Are you more anxious to be what the Ruler of the Universe meant you to be than you are to force others into what you, doubtless honestly, think His ways?

The chiefest work any man has yet done in this world was simply to be. Action is good, and is lasting, and is as necessary and obligatory as fruit from a fruit tree; but character, personality, the soul, comes before action, and by itself weighs more heavily than aught it can do. What induces men to follow a leader? Belief in him as an appropriate exponent, or agent, of ideas they would themselves carry out. He is so firmly and wholly in love with those ideas that in the minds of others he is hardly distinguishable from the ideas themselves.

A man may be silent and passive so far as positive endeavor is concerned, yet he unconsciously exerts positive influence. Emerson never said a truer thing than this: "You think, because you have spoken nothing when others spoke, and have given no opinions on the times, on the church, on marriage, on socialism, on secret societies, on the college, on parties and persons, that your verdict is still expected as a reserved wisdom. Far otherwise: your silence answers very loud." Again he says: "Character teaches over our heads."

Furthermore, when words and actions are plainly seen to be at variance with character, which, think you, leaves the more lasting impression, noble ideas, for instance, founded on selfishness, or character, silent and intangible though it is? Actions die of inanition unless sourced in and sustained by very life. We see them cast on the world and fancy them permanent; they are not. Why? Because only good lives; everything evil, like the families of criminals, perishes soon or late.

But unless it gives itself out in deeds there is, ordinarily speaking, no true life. Moreover, deception of self or of others is useless; if we say we are honest yet are not, time will obliterate our works. Speaking yet more practically, that man who poses as a reformer or an authority in ethics, yet is in some grave particular a man whom people cannot respect, fails miserably in his work. The instinct of the people discovers the discrepancy between the man and his acts, and sometimes — lament this as we may — rejects the wheat with the chaff. Let a convicted criminal preach the Gospel and where will the people be? Outdoors, and probably filled with prejudice against all clergymen. Or suppose the sin secret;

sometime it will out, when the knowledge will counterbalance and undo all the good the transgressor did an hundred times over.

Mencius says: "The disease of men is this: that they neglect their own fields and go to weed the fields of others; also that what they require from others is great, while what they lay on themselves is light."

"The highest law is the law of unselfishness." "The first great duty of man is toward himself." These two ideas harmonize perfectly, since the man who most greatly *is* is most capable of helping others, and will do it. For instance, the self-knowledge resulting from our endeavor to make the one soul, over whom we have power unlimited, complete in love and purity and strength, will make us charitable, loving and thoughtful to others.

Back of all, upon which we can lay the finger of analysis and say, "let us dissect the causes and reasons why we are influenced for good or evil,"—lies the subtle, strong and supreme fact of personality, unanalyzable, as spirit always is, but dominant over words and acts. "To thine own self be true" is hence the keynote of correct living, otherwise righteousness, without which no man can be of real and lasting service to his fellowman.

Much of the unselfishness in the world frustrates itself. We give or try to give, but not having first filled the reservoir, our giving is often an injury and sometimes a farce. In helping ourself first, right many seem to fall back a step,—perhaps actually does so,—but eventually and inevitably it gains two.

C. P. NETTLETON.

CONTEMPORARY OPINION:

FAILURES IN LIFE

DR. MANDELL CREIGHTON, the historian and newly appointed Bishop of London, made a speech in his diocese the other day, at the Artists' Benevolent Institution, on the subject of Failures. Our excellent contemporary, the "Spectator," founds upon the speech the following article, observing that the Bishop, in dealing with the topic, raised some very interesting and curious points in regard to failure, and as to why certain men succeed while others come to grief. He was, says the writer, quite within the mark when he noted that half the men who succeed have a feeling that they had no real right to their success, or rather, that they owed it to pure luck, and nothing else. It was impossible for them, said the Bishop, to discover the causes that made for success or failure, and those who had succeeded must very often wonder why they had done so, and must sometimes, in a cynical mood, think that the public taste was very incapable of proper discrimination. "They must feel that there were many of the acquaintances of their youth who were really much better fellows, and who could do much better work in a great many ways, but who, somehow or other, had not succeeded, and who, it was felt, might have succeeded if they had had their due. In all classes and in every pursuit they had the same feelings."

But just as it is impossible to say why men succeed, it is alleged that it is often quite as impossible to say why men fail. There is, as it were, a huge middle space in all professions and walks of life tenanted by the vast number of men and women who have neither failed nor succeeded, but who have managed to keep the water of life neither hot nor cold, but reasonably and comfortably warm. Above these are the men who have succeeded, some from obvious genius or the possession of qualities such as exceptional energy, perseverance, and determination, others apparently from pure luck; for as far as appearances go there is no quality upon which you can put your hand and say: "This secured that man his success, and won him his place in the world."

Below the middle space come the failures. Here, in popular estimation, exactly the same conditions apply. There are obviously many men who are failures simply because they possess to perfection all the qualities which make

failure inevitable. They are stupid, they are foolish, they are incapable of persevering in anything, they have neither belief in themselves, the power of originating, nor the capacity of imitating. In a word, they are mentally, morally, and physically incapable.

Next come the men who appear to have failed simply because they have had the luck againse them. They seem to have all the qualities which would insure success, or at any rate preclude failure, and yet they are clear and hopeless failures, and the general notion is that they have failed, not because they were incapable of succeeding, but through pure ill-luck. We have no wish to seem hard upon the men who have not been able to win a place even in the middle space between failure and success, but we do not believe that the explanation of luck holds half so strongly in the case of failure as of success. Of course there are a few unfortunate people who always fall ill or break a limb whenever a chance of promotion comes to them, but these are rare exceptions. The real failures are, we believe, due to some hidden defect, some imperceptible crack in the vase. Ordinary ill-luck may keep a man back for years, may take away a great deal of happiness, but there are so many chances in life that it very seldom ruins him permanently.

Even the most successful men have had back-waters in their lives, though they are forgotten in the ultimate successes. The man who lets a turn or two of ill-luck ruin him is not meant to succeed. Besides, are we not apt to call ill-luck a good deal which is not really ill-luck, but merely the logical consequence of perversity or fatuity? When the poet Fletcher wrote the proud line, "A man is his own star," he stated a great moral truth. In nine cases out of ten a man *is* his own star, and what he calls fate is but the consequence of his own actions.

Lord Bacon says that the king should beware of employing unlucky men, apparently on the ground that what we call their unluckiness is due to some hidden defect. But whether Bacon meant this or not, it is very true that so-called unluckiness is often the cloak of blundering and ineptitude. Two men are in peril. One escapes from, the other succumbs to, the sudden hidden danger, and we call them lucky and unlucky; yet, in truth, it is very possible that our judgment ought to be that one showed ingenuity and presence of mind and so escaped, while the other was at the critical moment surprised into hesitation or inaction. Depend upon it, the hidden quality which produces failure is, in the majority of cases, merely an unanalyzed element in the human character.

Probably self-distrust is one of the readiest causes of failure. A man who, however much he conceals the fact from observation, feels in his heart of hearts that he is not capable of doing the work he has undertaken, is almost sure to fail. Ordinary diffidence as to one's powers is quite another matter, and by no means a necessary impediment to success. Such nervousness is often purely superficial, and merely means that the anxiety to succeed is so great that it causes a reaction. The dangerous self-distrust to which we are alluding is a much more negative quality, and generally has joined to it a strong strain of indifference. But when a man does not think he will succeed, and also is doubtful whether it is worth while to succeed, or rather, whether it is not a matter of indifference whether he wins or loses, failure is almost certain. This stultifying indifference to failure is much more widely spread than people generally imagine. Because failure seems to the average man so horrible, producing, as it must, humiliations and miseries, remorseful feelings and regrets of every kind, the average man cannot imagine any human being indifferent to it. Yet, as a matter of fact, there are men whose hearts become so indurated that they do not mind either failure or its consequences. They would endure anything rather than rouse themselves to the painful effort of resisting the march of what they call fate. They will float with the stream or tide, but come what may, they will not row a stroke against either. They conceal this resolve from their friends, and sometimes even from themselves, but nevertheless it exists.

Another frequent cause of failure is the inability to be helped which certain people display. We have all encountered persons whom it is almost impossible to help over an obstacle or up a steep place. Do what you will, it seems impossible to lift or get them over or through. They always either fail to hold on, or give the

wrong hand, or move the wrong foot, or jump short when they ought to jump long, or over-jump when a short jump is all that is asked of them. In the same way there are people who seem utterly incapable of making use of a helping hand in the greater affairs of life. You cannot help them because they "muff," or spoil, every attempt. You find them a piece of work quite within their capacity, and there needs only the simplest and easiest little effort to secure an excellent position. Yet this little effort is just what they will not or cannot make. They may be prudent, painstaking, industrious, and yet almost while you turn your head they have slipped off the rock of safety and fallen back into the slough from which you so lately raised them. Of such stuff are the worst form of failures made. Their minds seem utterly unprehensile, and no more capable of grasping and holding on than is a paralytic. No doubt it is often not in the least the fault of the poor failure, but that does not alter the fact that it is a personal defect, and not mere ill-luck, which produces the failure.

While touching on the question of failures, it must not be forgotten that a great many of the so-called failures, especially in art and literature, are not failures at all, but merely persons who do not possess, or perhaps have not tried to cultivate, the quality of popularity. A failure is not a synonym for a pauper, but a person who has tried to do a particular thing and not succeeded in doing it. But most people try to make a good deal of money, and hence poverty is roughly taken as a sign of failure. If in a particular calling the average man makes $5,000 a year, he who makes only $1,000 is apt to be dubbed a failure. Yet in truth he may be nothing of the kind. If he did not set out to make money, he may not feel the slightest sense of failure.

Again, an artist or a man of letters who fails to please the public taste may not be a failure, for the very sufficient reason that he never attempted to please the public taste. The artist who says, "I will paint what I think beautiful pictures, and not what any one else thinks beautiful," may be annoyed that the public taste is so different from his own; but he will not feel that he has failed because the public taste is not satisfied by his work. He will not have expected any but an adverse verdict. It is the same in literature. Wordsworth did not feel and was not a failure because the public of his day cared nothing about, and would not read, his poems. To confuse unappreciated people and failures is to make a gross error in the art of human classification. Even bitter and disappointed men are not necessarily failures, for their bitterness and disappointment do not show that they have failed in what they set out to do, but merely that the world has failed to understand them.

The true failure is the man who keeps sinking, sinking — who seems to have no buoyancy in him, and who at heart knows that success is for him impossible. No one ever quite thinks of Mr. Micawber as a failure, because Mr. Micawber had always in him the belief that something, and something very good, would be sure to turn up. The true, the hopeless failure is always a pessimist at heart. He looks on the past with regret, and on the future with misgiving. However miserable their outward circumstances, and however hard and unfortunate their worldly lot, we must never call failures those brave souls who, in spite of every mischance, bate no jot of heart and hope, but press right onward, believing that somewhere and somehow they will find a haven of rest, and who hold with Browning that, if the earth is full of broken arcs, at any rate in heaven there is the perfect round. How can they be failures who thus teach by example the best of lessons?

Appear to know only this, says Epictetus — never to fail nor fall. If we do fail, it only establishes this, that our determination to succeed was not strong enough; and yet sometimes a noble failure serves the world as faithfully as a distinguished success. But failure has its lessons. As the poet Keats says, — though speaking not of character, but of failure in the pursuit of truth — it is the highway to success, inasmuch as every discovery of what is false leads us to seek earnestly after what is true, and every fresh experience points out some form of error which we shall afterward carefully avoid. Every failure, affirms the philosopher Whewell, in somewhat the same vein, is a step to success; every detection of what is false directs us toward what is true.

SOME TYPES OF MEN OF SELF CULTURE:

PROFESSOR JOSEPH HENRY, AMERICAN PHYSICIST

A NEW series of portraits for the cover of the magazine affords the opportunity to extend the list of our sketches of men of self culture. In the wide range of American biography there is hardly a more interesting example of the self-made and self-educated man than Joseph Henry, the great experimenter in electrical science, who for over thirty years ably administered the affairs of the Smithsonian Institution. It is Henry's long and distinguished career that we purpose briefly to outline this month in these pages.

Though Professor Henry's fame has not hitherto, in a popular sense, been great, there have been few laborers in the field of American experimental science who have done more than he in its cause, or used his splendid talents to better purpose in preparing the way for those wonderful advances of the age in electro-magnetism. Had he been less modest than he was, or more actuated by the commercial spirit that naturally prompts to invention and scientific research, he might have achieved a greater name and won an earlier and far wider recognition of the value of his important investigations. In England, especially, he at the outset of his career lost his chance of great distinction by the modesty we have spoken of, since it permitted that great contemporary physicist, Michael Faraday, who in the early "thirties" was working along the same lines of original research as Henry, to prosecute his investigations and gain credit for evolving electricity from magnetism. It is, however, admitted as a fact, that Faraday's discovery, in its essentials, was anticipated by Henry, by a period of over two years, while to Henry is due the important discovery of self-induction, besides other extensions as well as verifications of Faraday's observations in the phenomena of electro-magnetism. Faraday's conclusions up to a certain point only led him so far, but they took Henry farther; and what the latter found in experimenting with electrical phenomena Faraday was, after the lapse of some years, to discover for himself. This matter was explained, some two years ago, by a writer in the "Atlantic Monthly," in treating of the unit of induction, called after Henry's name, a compliment paid by the assembled world electricians at the International Congress, held at Chicago in August, 1893.

"Faraday," says this writer, "had found that when a current of electricity through one circuit was started, or stopped, or altered in strength, a current would be induced in a neighboring circuit; but the induction of a part of the circuit upon another part, or self-induction, had escaped him. Henry saw in it the interesting and previously unobserved fact that if the poles of a battery of no very great power be connected by a long wire, and the circuit be suddenly broken, a spark will be produced at the point of interruption, while if the connecting wire be short a spark will not be produced. He also noted that the effect was increased by coiling the wire into a helix, and as he remarked in the article describing his experiments, 'I can account for these phenomena only by supposing the long wire to become charged with electricity, which, by its reaction on itself, projects a spark when the connection is broken.' This was a capital observation; but, although published in 1832, it was apparently unknown to Faraday, who rediscovered the fact a few years later and announced it as new."

And yet Henry's work, in England as well as in this country, has not gone without recognition; * nor could it well be, considering its importance, at a time when electrical science was in the throes of its illustrious birth. In proof of this, let one tribute suffice. Prof. Fleming, one of England's leading electricians, has this to say of the worth of Henry's work, in a treatise in "The Alternate Current Transformer":—

"At the head of the long line of illustrious investigators stand preëminent the names of Faraday and Henry. On the foundation stones of truth laid down by them, all subsequent builders have been content to rest. The experimental researches of the one have been the guide of the experimentalist no less than the instructor of the student, since their orderly and detailed statements, alike of triumphant discovery and of suggestive failure, make them independent of any commentator. The scientific writings of Henry deserve hardly less careful study, for in them we have not only the lucid explanations of the discoverer, but the suggestions and ideas of a most profound and inventive mind, and which indicate that Henry had early touched levels of discovery only just recently becoming fully worked."

* See the article on Prof. Henry, by Prof. S. F. Baird, in the Encyc. Britannica, Vol. XI, page 675.

But as an original investigator and discoverer, it is not only on the plane of Faraday — great as he was — that Henry is admitted to take his stand; but he is also numbered with the eminent men of world fame who are identified with that giant and pervasive force in nature which this age has seen so marvellously utilized for the benefit and enrichment of the race. It is with Oersted, with Arago, with Ampère, with Coulomb, Sturgeon, Steinheil, and Morse, that Henry also ranks, and to the discoveries and inventions of whom he added important results in connection with what he called his "intensity" and "quantity" magnets and other experiments in the realm of physics. Previous to Henry's investigations, observes the late Prof. Asa Gray, "the means of developing magnetism in soft iron were imperfectly understood (even though the law from which they are now seen to flow had been mathematically worked out by Ohm), and the electro-magnet which then existed was inapplicable to the transmission of power to a distance. Henry first rendered it applicable to the transmission of mechanical power to a distance; was the first actually to magnetize a piece of iron at a distance, and by it to deliver telegraphic signals. He also showed what kind of battery must be employed to project the current through a great length of wire, and what kind of coil should surround the magnet used to receive this current and to do the work."

The importance of Prof. Henry's discoveries to Morse in adopting, through the instrumentality of Dr. Leonard Gale, the principle of the Henry electro-magnet and in making of the armature a recording instrument, Prof. Gray emphasizes, and adds "that if Henry had patented his discovery, which he was urged, but declined, to do, Morse could have patented only his alphabetic mode of signalling, and perhaps the use of relay-batteries, the latter indispensable for long lines upon that system."

But we turn from these technical matters to learn something of the man who so modestly figured in them, and to view Henry in other and no less important lights. Before dealing, however, with the biography of Henry, it may interest readers of SELF CULTURE to know, in popular terms, the successive steps in the mode of utilizing electricity for man's purposes since the era of Franklin. This we shall perhaps best do by quoting from an address delivered by the late President Garfield at the Morse Memorial meeting, held in Congress in April, 1872.

"When we consider," said the then Hon. James A. Garfield, "the startling forms in which this element [electricity] presents itself, it is not surprising that so many centuries elapsed before men dared to confront and question its awful mystery. And it was fitting that here, in this new, free world, the first answer came revealing to our Franklin the great truth that the lightning of the sky and the electricity of the laboratory were one; that in the simple electric toy were embodied all the mysteries of the thunderbolt. Until near the beginning of the present century the only known method of producing electricity was by friction. But the discoveries of Galvani in 1790, and of Volta in 1810, resulted in the production of electricity by the chemical action of acids upon metals, and gave to the world the galvanic battery and the voltaic pile, and the electric current. This was the first step in that path of modern discovery which led to the telegraph. But further discoveries were necessary to make the telegraph possible.

The next great step was taken by Oersted, the Swedish professor, who, in 1819–20, made the discovery that the needle when placed near the galvanic battery was deflected at right angles with the electric current. In the four modest pages in which Oersted announced this discovery to the world the science of electro-magnetism was found. As Franklin had exhibited the relation between lightning and the electric fluid, so Oersted exhibited the relation between magnetism and electricity. From 1820 to 1825 his discovery was further developed by Sir Humphrey Davy and Sturgeon, of England, and Arago and Ampère, of France. They found that by sending a current of electricity through a wire coiled around a piece of soft iron, the iron became a magnet while the current was passing, and ceased to be a magnet when the current was broken. This gave an intermittent power, a power to grapple and to let go at the will of the electrician. Ampère suggested that a telegraph was possible by applying this power to a needle.

In 1825, Barlow made experiments to verify this suggestion of the telegraph, and pronounced it impracticable on the ground that the batteries then used would not send the fluid through even two hundred feet of wire without a sensible diminution of its force. In 1831, Joseph Henry, Secretary of the Smithsonian Institution, then a professor at Albany, N. Y., as the result of numerous experiments, discovered a method by which he produced a battery of such intensity as to overcome the difficulty spoken of by Barlow in 1825. By means of this, his discovery, he magnetized soft iron at a great distance from the battery, pointed out the fact that a telegraph was possible, and actually rang a bell by means of the electro-magnet acting on a long wire. This was the last step in the series of great discoveries which preceded the invention of the telegraph."

The status of Joseph Henry among scientists is, it will be seen, an assured one, and very important was his work. How he came to fit himself for his achievements is an interesting story, not only in itself, but in its exemplification of what self-effort will accomplish where there is alertness of mind, coupled with ambition and a lofty sense of duty.

Henry was born in Albany, N. Y., on the 17th of December, 1799. His grandparents, on both his father's and his mother's side, came from Scotland at the outbreak of the Revolutionary War. When about seven years of age, young Henry went to live with his maternal grandmother at Galway, Saratoga County, N. Y., where he attended for a while the district school and learned the rudiments of an English education. Shortly after this his father died and the youth was placed in a store in the village, but later on he returned to the place of his birth and there was apprenticed to a watchmaker and silversmith. Before returning to Albany, the story is told that young Henry, who had hitherto shown no taste for books, found his way surreptitiously into the village library, in the hunt for a pet rabbit which had burrowed its way under the foundations of the village church, where the library was kept, and there he took his first headlong plunge into the sea of romance. The volume that here fascinated him was Brooke's "Fool of Quality," the plot of which, it is related, he retailed to listening comrades gathered about him when opportunity at play brought them to his side.

At Albany, the watchmaker gave up business and the young apprentice was set free from employment at the age of fifteen. At this time he had formed a strong predilection for the stage, and being without definite aims and having no one wisely to counsel him, the youth was fast drifting on the sea of life, with a decided bent towards the theatre, as promising the means of livelihood and of gratifying his dramatic aspirations. At this juncture an accident befell him which kept him within doors for a season. To while away the tedium of incarceration he chanced to pick up a book, owned by a Scotchman who boarded with his mother. The book, a work on Natural Philosophy, altered the after-current of the youth's career, for it opened a new and real world to him, and fed his imagination more satisfactorily than could a masquerading life before the foot-lights. In the volume he was brought into the vast presence of nature, and in that domain, as it has been said, were subjects of investigation far more worthy of attention than anything in the ideal world in which his imagination had hitherto roamed. Henceforth, the youth, now turned student, devoted himself with characteristic ardor to mathematical and physical learning and made the domain of physics the field of his investigations and his pursuit in life.

Before leaving this incident in Henry's life, a further word or two may be permitted us with reference to the chance book upon which the youth lit, and which proved so stimulating to his alert and vigorous mind. The work was Dr. Gregory's "Lectures on Experimental Philosophy, Astronomy and Chemistry" — one of those instructive and mind-fructifying compilations, suggesting questions about common things, and afterwards giving answers to them in simple and familiar language. The work, as befitted one intended chiefly for the young, begins by asking such sensible though unpretentious questions as the following: — "You throw a stone, or shoot an arrow into the air; why does it not go forward in the line or direction that you give it? Why does it stop at a certain distance, and then return to you? . . . On the contrary, why does flame or smoke always mount upward, though no force is used to send it in that direction? And why should not the flame of a candle drop toward the floor when you reverse it, or hold it downward, instead of turning upward and ascending into the air? . . . Again, you look into a clear well of water and see your own face and figure, as if painted there. Why is this? You are told that it is done by reflection of light. But what is reflection of light?"

That a work of this character, with its apt, and to an enquiring mind like Henry's alluring questions, should have held him in thrall and opened to him a career which became the passion of his life, one can readily understand. Here, indeed, is his own testimony to its influence upon him. On a fly-leaf of the work, which he preserved all his life, he wrote: "This book, although by no

means a profound work, has, under Providence, exerted a remarkable influence upon my life. It accidentally fell into my hands when I was about sixteen years old, and was the first book I ever read with attention. It opened to me a new world of thought and enjoyment; invested things before almost unnoticed with the highest interest; fixed my mind on the study of nature, and caused me to resolve at the time of reading it that I would immediately begin to devote my life to the acquisition of knowledge."

The gateway of knowledge which Dr. Gregory's lectures had opened for Henry was eagerly taken advantage of, and we soon find the future devotee of science hard at work preparing himself for his laborious and active career. At first he attended a night-school, then for a time pursued teaching to enable him to earn the means of entering Albany Academy, where he afterwards became an assistant teacher, and later on professor of mathematics. His educational labors were varied for a while by a surveying expedition, undertaken for the State Government of New York, and by a term of tuition work in the family of the local patroon, General Stephen Van Rensselaer, one of the trustees of the Albany Academy, and president of the Albany Scientific Institute. To the transactions of the latter, Henry began in 1824 to make contributions on his favored topic, electro-magnetism; while his researches and experiments in connection with his professional work soon brought him into note among the scientific investigators of both hemispheres. This was notably the case when he exhibited before the Institute his powerful electro-magnet, with its silk-covered wire spool or bobbin, the development of which enabled him later on to astonish the scientific world, and secured for him the professorship of Natural Philosophy at what is now the University of Princeton.

Before we leave Henry's youthful career, let us here quote the interesting parallel between him and his great English rival, Faraday, set forth in 1880 by Prof. Alfred M. Mayer, in a memorial address read before a scientific association at Boston. "My own judgment, if of any value," says Prof. Mayer, "would rank the ability of Henry — I do not say his achievements — a little below that of Faraday. Indeed their lives and their manner of working were strangely alike. Each born in humble condition, without any of the adventitious aids of position or influence, was destined apparently to mechanical occupation. Faraday was an apprentice to a bookbinder. Henry served in the same capacity under a silversmith. Each started in life with moral and benevolent habits, well-developed and healthy bodies, quick and accurate perceptions, calm judgment, and self-reliance tempered with modesty and good manners — a good ground surely in which to plant the germs of the scientific life. Each, by innate force of taste and intellect, was impelled to the pursuit of knowledge under obstacles which would have damped the ardor of ordinary youths. Each, endowed with a lively imagination, was in his younger days fond of romance and the drama; and, by a singular similarity of accidents, each had his attention turned to science by a book which chance threw in his way. This work in the case of Faraday was Mrs. Marcet's 'Conversations on Chemistry;' and the book which influenced Henry was Gregory's 'Lectures on Experimental Philosophy.'

"Of Mrs. Marcet's book, Faraday writes to a friend: 'Your subject interested me deeply every way; for Mrs. Marcet was a good friend to me, as she must have been to many of the human race. I entered the shop of a bookseller and bookbinder at the age of thirteen, in the year 1804, remaining there eight years, and during the chief part of the time bound books. Now it was in those books, in the hours after work, that I found the beginning of my philosophy. There were two that especially helped me, the 'Encyclopædia Britannica,' from which I gained my first notions of electricity, and Mrs. Marcet's 'Conversations on Chemistry,' which gave me my foundation in that science."

Henry entered upon his work at Princeton in 1832, and here he remained for fourteen years, doing great work for science and widely extending the range of his scientific attainments. Here he continued his experiments in electricity, and was the first to set up a line of telegraph, using the earth as a conductor, which enabled him to signal from his house across the college campus to his laboratory. Here also he pursued his investigations in relation to electro-

dynamic induction, which brought his name and his discoveries to the notice of the great rival investigators of Europe, with the friendship of such men as Wheatstone, Faraday, Airy, and other eminent physicists in England, and Arago, Becquerel, De la Rive, Biot, Gay-Lussac and other celebrities on the European Continent. These friendships he formed in 1837, during a visit to Europe in company with his intimate friend, Prof. A. D. Bache, then secretary of the American Philosophical Society.

In 1846 an Act of Congress established the Smithsonian Institution at Washington, from funds (exceeding half a million dollars) which had been bequeathed by an Englishman to the nation "for the increase and diffusion of knowledge among men." In the administration of this noble bequest, to which Professor Henry was called by the governing Board of Regents when the Institution was founded, Henry devoted over thirty years of his mature life. In this new sphere he brought to his great task, besides the wide range of his high intellectual endowments, a large practical knowledge of many departments of science, ardent enthusiasm for scientific research and discovery, together with rare powers of administration and wise counsel. In accepting this post, which he reluctantly did, since it withdrew him from all opportunity for original scientific research, to which he had devoted himself at Princeton, the State obtained for the secretaryship of the Smithsonian benefaction a man exceptionally well-equipped for the responsible and arduous position.

Nor did the State obtain in Professor Henry a mere functionary or titular incumbent of the office. It found in him a man of rare distinction, an admirable administrator, courageous as well as sage in counsel, intelligently in sympathy with what he conceived to be the designs of the founder in making the bequest to the nation, and having pronounced views as to the best and most efficient modes of giving them effect. At first he experienced many difficulties in his task, and not only those that originated in narrow prejudice or in selfish interest, but such as were due to ignorant misconception of the founder's evident intention in donating the money, and of what was possible and what was both best and fit to accomplish with it. Henry's sound judgment and excellent foresight happily, at length, prevailed, and in a thousand ways he made the Institution what, under his administration, it became — one of the most useful and valuable agents of scientific communication between learned bodies all over the world, and one of the most helpful mediums for aiding research, and diffusing a knowledge of scientific invention and discovery.

Under Henry's judicious as well as able management, the Smithsonian Institution has not only taken rank among the most influential organizations in the interest of science, but has been of the greatest assistance to struggling genius, by awarding prizes and granting subsidies to those engaged in research, and, what is of equal moment, in making possible the publication of original memoirs, and of highly important and specialized contributions to knowledge, and securing their dissemination through a system of exchanges. To this exacting work, Henry added years of invaluable service to the United States Government, in connection with acoustics, meteorology, the weather signal service, and the national light-house system, besides presiding at conferences, contributing to transactions of scientific and other institutions, and taking part in the labors of learned bodies as "guide, philosopher, and friend."

His, in short, was a great and an eminently useful career. Nor was his death (which occurred at Washington May 13, 1878) less of a loss to science than it was a keen personal loss to those who knew and loved him, since he was not only a man of large and kindly nature, and of high and serene wisdom, but a man "of calm, well considered and decided Christian faith." No one — to quote the words of a discriminating eulogist — knew better than he whose life had been spent in seeking to penetrate the secrets of the natural world, what were the powers, and what were also the limitations of the human intellect; but believing as he did, that truth in all its forms proceeded from its one great Author, he doubted not, that when faith is exchanged for sight, it will be found in all its varied manifestations to be at perfect unity with itself.

G. MERCER ADAM.

THE STORY OF HUMAN PROGRESS:

THE EPOCH OF REFORM IN ENGLAND, 1830–1850*

INTRODUCTORY

IN the eighteenth century England was not without its reformers. Honeycombed as the land was with social and political corruption, there were men, like Pitt and Howard, who saw the evils of their times and sought to remedy them. Their efforts did not avail much, partly because of the indifference and opposition of George III. and partly because of the numerous wars in which England was involved. During the first years of the nineteenth century, the English were engaged in a life-and-death struggle with the armies of France. The energies of all were employed in putting down the common enemy of Europe, Napoleon Bonaparte, who was especially the foe of Britain. In consequence, the internal progress of the kingdom was arrested.

Reform hindered in the Georgian Period

Interval of Peace, 1815–54

The interval between 1815 and 1854 was a time of peace for England, though there was more or less fighting in the East, where some territory was added to the British possessions known as the Indian Empire. During this period of comparative quiet, the condition of the English people, especially of the lower classes, was looked after.

Slow return to a Normal State

For ten years or more, after the battle of Waterloo, the English were trying to recover from the ill effects of the Napoleonic wars. It was no easy task to bring the nation into what may be called a normal state. This was in part due to the increasing complexity of civilization, with its fresh problems and enlarged possibilities. Statesmen were confronted, too, with altered political conditions — the result of the conflict of the principles of feudalism and democracy, of kingcraft and aristocracy against republicanism and equality. The French Revolution and other convulsions in Europe ushered in the grander era of the supremacy of the people. The career of the Corsican was not without its blessings for his countrymen and for mankind. He was instrumental in tearing down the tottering walls of the old feudal structure of conventional beliefs and customs, thus making way for a more beneficent system.

Times Ripe for Reform

Meanwhile much-needed legislation had to wait until better days should come. In 1830 times were ripe for reform, and at last it came. It assumed four phases or lines of improvement: Political, social, economical, and educational. The next two decades were preëminently an epoch of change from the old to the new order of things. Henceforth the redress of wrongs was the chief business of the British Parliament.

During this transition period, there were five governments in England and four premiers:— (1) The reform ministry, so termed because the Whig administration passed the Reform Bill of 1832, first under Earl Grey, and then under Lord Melbourne, 1830–4; (2) the conservative ministry, as the Tory party began to be called, under Sir Robert Peel, lasting only four months (Dec. 26, 1834 to April 18, 1835); (3) the Whig, under Lord Melbourne, 1835–41; (4) the Conservative, under Sir Robert Peel, 1841–6; (5) the Whig, under Lord John Russell, 1846–51.

POLITICAL REFORM

Absolute rulers and Constitutional Sovereigns

There was a marked contrast between the two rulers of England at this period. William IV., who reigned seven years (1830–7), was the last of the old type of kings in Britain. The Georges and William were not representatives of

*See the article on England (section Parliamentary Reform) in the Encyclopædia Britannica, Vol. VIII., pp. 364–67. Consult also Martineau's "History of the Peace;" Molesworth's "History of England" (1830–74); "The Reign of Queen Victoria," edited by T. Humphry Ward; Justin McCarthy's "History of Our Own Times," with Mercer Adam's continuation from 1880 to 1894; McCarthy's "Epochs of Reform;" R. Mackenzie's "The Nineteenth Century;" Morley's "Life of Richard Cobden;" together with the lives of Sir Robert Peel, John Bright, W. E. Gladstone, Lord John Russell, W. E. Forster, Lord Brougham, W. and R. Chambers, Charles Knight, the Prince Consort, Lord Beaconsfield, and William Cobbett.—ED.

the people. Victoria belongs to the new class of monarchs who are exponents and agents of the national will and sentiment. She ascended the throne as a constitutional sovereign. Ministers and Parliaments were no longer the puppets of a crowned aristocrat. The days of English absolutism were over. Now the people are the rulers, not the Queen (who has less power in the State than our own President). Before 1830, representation in the United Kingdom was but a name, and too often a farce. The majority of both houses of Parliament were from the same class — the aristocracy and the gentry. The proportion of voters to the entire population was one in fifty ; now it is one to six.

The Masses excluded from Politics

In the good old Tory days of George IV., the lords were practically in control in nearly all the boroughs and counties. The power of the lower classes was purposely kept in check. The will of the poor was defeated. It was hard for them to get information, the newspapers and reviews of the day being too high-priced for the masses. So long as they were ignorant, they had in fact but little voice in the government. The censorship of the press stood in the way of their political enlightenment. The press, which is now the mouthpiece of a discontented public in English-speaking lands, was then to some extent muzzled. Fortunately for the reform agitation, a larger degree of liberty was granted to writers at this time. While severe press-laws were rigorously enforced in France and other European countries, free utterance of opinion was enjoyed in England — government prosecutions of liberal journals having ceased about 1830.

The right to Agitate denied

The common people were not only practically excluded from politics by imperfect representation — they were denied even the right to agitate, which is the sovereign remedy for flagrant evils. In the days of the Georges, when the Duke of Wellington championed the cause of the Tories, the people were not allowed to hold public meetings, even when they met peaceably, "with no design but to petition for Parliamentary reform." At Manchester, in 1819, an orderly crowd of people was charged upon by the mounted yeomanry and ruthlessly sabred and struck down — eleven persons being killed and several hundred wounded.

The Two Classes out of Touch

The upper and lower classes were out of touch. The peers, as usual, were behind the times, out of harmony with the new spirit of the age. They stood for hereditary privilege, and obstructed reform as long as they dared. In the breasts of the people the conviction was growing that they were entitled to more rights. They demanded a share in the government. This condition of things could not last. In 1830, Wellington and his Tory ministry, finding resistance futile, gave way to the pressure of public opinion ; the Whigs, representing the interests of the people, carried the day. Only a few years before, his predecessor, the great Canning, had pleaded in vain for the rights of the majority. Two events conspired to help on the cause of reform — the timely death of George IV. and the French Revolution of 1830.

The radical changes of the Reform Bill, introduced (March 1, 1831) by Lord John Russell, demanded nothing less than a re-organization of the House of Commons on the basis of popular representation. It met with determined and bitter opposition on the part of the Tories. The alarmists had their say. The incoming tide of democratic reform was to sweep away the House of Lords. It meant the downfall of the old nobility. They feared that "the time was not far distant when all that England prized would perish under a reformed Parliament." Some of them prophesied "national ruin and bankruptcy." That most inveterate of Conservatives, Lord Eldon, declared: "If this measure passes, there is an end to the monarchy." Their melancholy fears were groundless, but they delayed the passage of the bill for a while.

Tory opposition to Popular Representation

During this crisis the common people were terribly in earnest. The ignorant peasants in their distress and desperation took to rick-burning, machine-breaking, window-smashing, and other outrages—so passionate was their indignation. Open and widespread revolt was happily averted. The procession of events was such as inevitably led up to one result. Earl Grey, on moving the

second reading of the Reform Bill (Oct. 3, 1831), stated that the only condition on which he accepted office was "that he should bring forward the question of Parliamentary reform as a measure of government." The bill was defeated (Oct. 8) in the House of Lords by a majority of forty-one. But the struggle was kept up. Public meetings were held throughout England, clamoring for political reform.

Parliamentary Reform defeated in 1831

Reform Bill passed in 1832

For a third time the Reform Bill was brought before Parliament; and its fate was settled by the prospect of having some sixty new peers created. To increase the number of the reformers in the House of Lords in this way was too much for the Conservatives, and they reluctantly yielded. The Reform Bill finally passed in June, 1832. It proved to be, as one has said, "for the British people, the greatest political fact of the nineteenth century." It did not bring universal suffrage, but it added half a million electors in Parliamentary and municipal elections, giving a vote to "every £10 town householder."

SOCIAL REFORM

In the year 1829, tardy justice was done the Roman Catholics of the realm by the Emancipation Act, allowing them a share in the government and the right to hold office. In 1833 slavery was abolished in the West Indian islands of the British dominions. Then came legislation for the relief of the white slaves at home, beginning with the Factory Act of 1833, lessening the hours of labor in the mills and factories. The benefits afforded by this bill were further extended by the Factory Acts of 1843 and 1847, limiting the working hours of women to ten hours each day, of children under thirteen to six and a half hours, also providing for their instruction. The author of these important measures was Lord Ashley (later the Earl of Shaftesbury), commonly known as "The Workingman's Friend." Through the agency of this noble-minded philanthropist, the degrading employment of women and children in mines and collieries ceased in 1843. Up to this date they had worked from eleven to sixteen hours out of twenty-four underground, subjected the while to infamous treatment.

Emancipation, and the Factory Acts

"The evils of pauperism in England," says Robert Mackenzie, author of a well-written work on "The Nineteenth Century," "had become unendurable, and it was felt that some attempt to remedy them could no longer be delayed."

The Poor Law and other Reforms

The New Poor Law of 1834 effected "a vast and most beneficent change in the condition of the English peasantry." The Municipal Reform Act passed in 1835 was one of far-reaching influence. Among other gains for the common weal in the Parliamentary legislation of 1836 may be mentioned the Tithe-Commutation Act and the General Registration Act.

Reduction in the Newspaper Tax

Hitherto the heavy tax on newspapers made them a costly luxury. In 1836, this was reduced from four pence to a penny (8 to 2 cents) a copy. The duty on paper was also reduced, and books and periodicals were thus within the reach of the poor man. The freedom of the press, now an accomplished fact in England, immeasurably increased the power of the printed page.

Penny Postage

It had long been recognized that the postal system was in sad need of reform. Rates of postage were exorbitant. Stamps cost from eight to sixteen pence (16⅔ to 33⅓ cents) on letters passing between cities, not widely separated, in the United Kingdom. Through the influence of Rowland Hill, a sweeping change was effected, and in December, 1839, penny (2 cent) postage was adopted. Not long after this, the government undertook the task of prompt delivery of mail matter at the homes of country people.

Better Copyright Laws

In 1842, a law was passed affecting the interests of authors in their published works. It increased the term of copyright from twenty-eight to forty-two years, fixing a further term of seven years after the author's death, for the benefit of his heirs. In 1846, International Copyright between the countries of the European Continent, was enacted.

More Tolerance shown Dissenters

The Established Church was still favored in many ways at the expense of other religious bodies, but more tolerance was now beginning to be shown Dissenters. The enlightened spirit of the time fostered legislation granting privileges to Nonconformists. In 1836, an act was passed permitting clergymen of their own faith to perform the marriage ceremony, also allowing the civil form of marriage. In 1846, some of the disabilities of the Jews were blotted out of England's statute book.

University College, London

The doors of Cambridge and Oxford had hitherto been closed to students belonging to other churches than the Anglican — candidates for degrees being required to sign the Thirty-nine Articles. To meet the growing demand for the higher education among Nonconformists, London University College was founded in 1828, and in 1835 London University was empowered to confer degrees. From time to time various concessions were made to Nonconforming bodies, and now scholastic degrees and honors are open to all at England's ancient seats of learning.

ECONOMICAL REFORM

It was during this remarkable epoch of legislative reform that Great Britain reached her supremacy as a manufacturing nation, and determined upon a radical change of policy. She opened her ports to the world, removed the duties on hundreds of imported articles, and reaped enormous benefits from commercial freedom. The raising of revenue was simplified, and Englishmen were no longer burdened with innumerable taxes imposed on all the necessaries of life. After several years of bad harvests, of famine and financial depression, the iniquitous Corn Laws were abolished, and henceforth bread was cheaper and more plentiful among the working people.

England's Change of Policy

Class Legislation attacked

The story of economical reform is one of the most interesting chapters of English history. It began with an attack on the evils of class legislation. For many years the government had served the interests of certain classes—the landlord, the farmer, the manufacturer, the ship-owner — at the expense of others. By their enrichment, it was claimed that the laborer was better off, because the protected classes could pay him higher wages. But the government's favors were never fairly distributed — the gains went chiefly into the pockets of the few. The abandonment of the protective principle was stubbornly contested. It took time for economists and legislators to outgrow selfish motives, to rise to a right conception of the general welfare of the nation, and to legislate for the public good.

The Corn-Law Agitation

The repeal of the Corn Laws was discussed and agitated eight years before the Act of 1846 was passed. The progress of Free-Trade sentiment was immensely facilitated by the timely reduction of postage. The Anti-Corn-Law League distributed vast quantities of pamphlets and speeches over the whole country. The leaders of the movement were Charles Villiers, an aristocrat; Richard Cobden, of the yeomanry; and John Bright, of the middle class. With other effective speakers, they carried on a grand educational campaign against class legislation. The protective system, as Lord John Russell put it, had long been "the blight of commerce, the bane of agriculture, the source of bitter division among classes, the cause of penury, fever, mortality, and crime among the people." It was materially modified in 1842 and 1845. Its end was hastened by an unexpected event, but controversy would have brought its downfall sooner or later.

Sir Robert Peel and Tariff Revision

Agricultural distress had prevailed in the latter years of the Melbourne administration, and the nation was sinking deeper and deeper into debt. The new Conservative Ministry found itself in 1842 obliged to face a serious problem — that of relieving the government from financial embarrassment. Sir Robert Peel, then Prime Minister, proposed (1) an income-tax falling mainly on the moneyed classes; and (2) a sweeping tariff revision — 750 specific duties out of 1200 being reduced or repealed. Thus he solved the problem of preserving public credit. His statesmanship brought the country through a severe crisis, and good times gradually returned. In 1845, there being a surplus

of revenue, the duty on sugar was reduced, and that on glass was remitted; while all the remaining export duties were swept away, also the customs-duties on 430 articles of raw material used in manufactures. The years 1845–6 brought on business prostration in England — the fever of railway speculation being followed by collapse and adversity to thousands; and Ireland was desolated by starvation and misery due to the potato-rot, which destroyed the one crop affording subsistence to the poorer classes. Peel realized that food must be cheaper, and advocated the removal of the duties on corn. By the Act of 1846, the tariff was wholly removed on a long list of miscellaneous articles of diet, such as potatoes, vegetables, cranberries, beef, animals, poultry, etc. The duties were reduced on wheat, barley, oats, rye, meal, flour, cheese, butter, rice, etc. By the terms of the Bill, protective duties on grain were to cease in 1849; after this, customs were levied merely for revenue, and on only twelve articles. A few years before, there were more than twelve hundred subject to taxation impost.

Advantages of Free Trade

Tariff reform told effectively on the material comfort and welfare of the masses, being accompanied by a rise in wages and a fall of prices. It is said that "£75 in 1851 went as far as £103 in 1840." Tory dulness and selfishness had long resisted and postponed this economic measure, whose advantages were afterwards apparent to everybody. England now entered upon a career of commercial expansion and general prosperity, unexampled in her past history. Recently there has been some discussion as to the permanent benefits of Free Trade, but the prevailing view among political economists is that this step aided amazingly in bringing about British industrial development.

The wisdom of the government was shown in the repeal of the Navigation Laws in 1849, after long opposition. Contrary to the predictions of Protectionists, English shipping made unprecedented progress thereafter, its growth being stimulated, not retarded, by the new Free Trade policy throwing open the carrying trade to unrestricted competition. As Mr. Gladstone forcefully put it ten years ago:—

Growth of English Shipping

"The repeal of the Navigation Laws was effected in 1849, amid a howl of prophecies that it would be found to have involved not merely the destruction of a 'harassed interest,' but the downfall of our national defense. The result of the new law, in combination with the great change in shipbuilding from wood to iron, was that the harassed interest has been strengthened, a noble art improved, the character of the service refined and reformed, the tonnage multiplied, and a new position given to Great Britain as the first among the shipbuilding countries of the world."

EDUCATIONAL REFORM

Grants for Popular Education

In the first quarter of the nineteenth century, there were no free public schools in England. The masses were then purposely kept illiterate, because they were thus more easily controlled. Says Lord Cockburn: "The principle was reverenced as indisputable that the ignorance of the people was necessary to their obedience of law." Gradually the English government roused itself to the need and importance of popular education. From 1833, annual grants of £20,000 were voted for building schoolhouses. In 1839, the amount was raised to £30,000, and in 1850 it was £160,000. In 1841, £30,000 was expended for schools, while the expense of gaols was £137,449, and that of houses of correction £129,163. Nonconformists, especially Roman Catholics, were slighted in the matter of Parliamentary aid for elementary education, the schools of the Established Church getting the lion's share of the funds.

Illiteracy among English Laborers

Before this, there had been a considerable number of private and parochial schools in Great Britain, but the accommodations for scholars were inadequate. There was no such thing as universal compulsory education. Eton, Rugby, and other famous institutions were for the middle classes and the nobility — not for the sons of common laborers. In many families of the lower classes, the children were put to work at six years old. In some instances, the poverty or indifference of parents prevented them from

sending their children away to schools, which were then at too great distances apart. As a result, from one-third to one-half of the youth were growing up not knowing how to read or to write. On this point, Matthew Arnold observes:

The Great Societies and Popular Education

"In the early years of the present century the National Society and the British and Foreign School Society were founded. . . . From that time forward until 1839, these great societies were the chief and almost the sole agents for improving popular education in this country. Probably even before they existed there were scattered over the country a certain number of good schools, created and maintained by the zeal of individuals. . . . The means at the disposal of the great societies and of individual promoters of education were wholly insufficient. Immense and formidable gaps in the supply of schools presented themselves; whole regions were in a state of ignorance and barbarism."

State Supervision of Schools

Until the beginning of Queen Victoria's reign, the State had no supervision over the schools of the realm. In 1839, a Committee on Education was instituted, and inspectors of schools were appointed. From time to time the number of inspectors was increased, and about 1850, Matthew Arnold was appointed, who contributed not a little to the transformation of English schools during his long term of service.

The school inspectors were not long in discovering many lamentable defects in teaching and management. Too often it happened that teachers were incompetent, or took but little interest in the progress of their pupils. What they lacked in knowledge and inspiration, they made up by severity. Generally the textbooks used were crudely written, and not calculated to make learning easy or accurate. Boys from nine to sixteen had a hard time of it with the grind of Latin and Greek, while their instructors neglected them in arithmetic and almost everything else now supposed to be useful information. Educational methods were as bad then in other lands, yet in respect to the cost and quality of common-school education it must be confessed that England was for a long time behind Germany, France, and the United States.

Educational Defects

According to Matthew Arnold there were some good schools during this period, in spite of unfavorable conditions. The schoolhouses "were in general ill-furnished, ill-warmed, ill-supplied with books and apparatus." The lot of the teacher was truly deplorable. He was poorly paid and ill-instructed. Under the circumstances it could not be expected that his intellectual equipment would be of a high order. There was a pressing need of a normal school for training teachers. Sir James Shuttleworth, a man prominently identified with educational progress in England, attempted to supply this want by opening the Battersea Training School in 1840. In 1846, he became Secretary to the Committee on Education and, with the increased aid afforded by the government, accomplished much towards increasing the compensation and the efficiency of teachers. "In 1851

Training Schools Established

twenty-five Training Colleges had been established; and these had a sure supply of qualified recruits in the 6,000 pupil teachers who were by that time being trained to the work. The certificates of merit for teachers were gradually transforming the teaching profession into an organized body, with a well-defined standard of proficiency. More than 1,100 teachers had obtained these certificates."

In 1852, according to the Educationist G. L. Craik, "nearly 3,800 schools had been built with Parliamentary aid, providing accommodation for no less than 540,000 children." Meanwhile something had been done in other ways to break up the mental stagnation of the masses, whose opportunities for acquiring knowledge and discipline had heretofore been limited. There were public-spirited persons in England who saw the pernicious results of "the reign of ignorance" and became impressed with the necessity for popular enlightenment. They established Sunday schools, where neglected children were taught to read. They formed societies (in 1827 and the following years) "for promoting the diffusion of useful knowledge," agricultural associations, etc. They founded mechanics' institutes. They began the issue of

cheap pamphlets and readable handbooks of history and science, such as the Bridgewater Treatises, much read in their day. "Family Libraries," "Libraries of Entertaining Knowledge," etc., abounded. Immense editions of the *Penny Magazine* were published. There was a growing demand for cyclopædias and instructive volumes on a variety of subjects, which were prepared, in large measure, through the instrumentality of such men as Lord Brougham, and such publishers as Wm. and Rob't Chambers & Charles Knight. Eminent scholars were enlisted in the laudable undertaking to popularize learning by means of lectures and public addresses.

Efforts to promote National enlightenment

DEMOCRACY AND ITS FRUITS

Growth of the Democratic sentiment

Along with the onward course of education and the increased spread of knowledge through the press, the democratic sentiment was gaining ground. "The hall of science," says Buckle, "is the temple of democracy." The Reform Bill of 1832 ushered in an era of popular progress, of industrial and moral revolution. It was an age of peace and prosperity, yet there was much agitation in the political world, for the workingmen banded together to protect their interests and to obtain their rights. The succeeding years witnessed extraordinary improvements in their condition; and the material advancement of the English laborer is an index of the commercial expansion of the British Empire.

Puritanism and Democracy

The "spirit of reform" did not originate with the French Revolution, though the cause of the people was helped on by this mighty impulse given to freedom. The genesis of democracy can be traced back to the time of Cromwell and the Puritans. First, the Divine Right of the Pope was questioned in the sixteenth century; then the Divine Right of the King, in the seventeenth century. The example of a republic across the sea had, too, its influence in promoting self-government in England.

The Radicals advance Republicanism

The "Political Register," edited by William Cobbett, increased the ferment of ideas which made reform inevitable. The "Westminster Review"—founded in 1823 as the organ of Bentham, J. S. Mill, and other radicals—is not to be ignored in reckoning up the agencies which contributed to the democratic movement. The printing of Parliamentary debates gave the Liberals an immense advantage, for they now spoke to the whole country. The "reforming instinct" was in the air. Not many years before, Byron found himself, like Burns and Shelley, almost a solitary representative and voice of the discontent and unrest of his time. Only a few of his contemporaries dared give expression to republican sentiments.

Self-Government and Self-Respect

Many blessings and privileges flowed from the Reform Bill of 1832, notwithstanding its shortcomings. The extension of suffrage was accompanied by an enhanced feeling of self-respect, especially in the middle classes. Self-government brought an increased sense of responsibility. Along with the march of democracy, came the intelligence required for advancing civilization.

English moderation

What distinguished the conduct of the English people during this trying period, in comparison with the French and other impulsive peoples of Europe, was their good sense and sobriety—that characteristic which Tennyson so felicitously expressed in the line

> "Where the common sense of most shall hold a fretful realm in awe."

They avoided the fierce extremes of Celtic and Latin races. They saw the folly of ill-timed resistance. As they grew intelligent, they grew temperate and hopeful. They were moderate in their demands. They did not give way to fits of feverish impatience, even under strong provocation. They trusted to the wisdom of cautious, far-seeing statesmen to right their grievances; and these statesmen had the faculty of knowing

> "The seasons, when to take
> Occasion by the hand, and make
> The bounds of freedom wider yet."

There were famines and financial depressions, but the people saw better times ahead, and abstained from revolution. They agitated, but usually did not resort to desperate measures.

The Chartist movement and Irish disaffection

With the exception of the Chartist movement (1838–1848), the popular demonstrations of these troubled years were seldom characterized by violent disturbances. Even the uprisings of the peasants in Ireland, where Daniel O'Connell addressed gatherings of hundreds of thousands, generally kept within the limits of the law and refrained from riotous acts. The Young Ireland movement of 1848 (the year of European revolutions), led by the enthusiastic Mitchel and Meagher, has been called "a rather pretty playing at rebellion."

British Skill and Ingenuity

"The era since the death of Scott," remarks Frederic Harrison, "is essentially a scientific age, a sociologic age." It was an age of surprising discoveries and notable inventions. British workmen gradually rose to the needs of the hour. They developed the ability to solve social problems. They applied themselves to the task of understanding and utilizing the laws and forces of nature. In the exercise of mechanical skill and practical ingenuity, they far outstripped former generations. The captains of industry found them efficient helpers.

Service of Science to Humanity

Science was enlisted into the service of mankind, to meet the everyday wants of life. Not long after 1830, lucifer matches came into common use; a little later saw the advent of the sewing-machine and many useful implements that were to lighten the burdens of the toiler and contribute to his happiness. In the year 1837, telegraph wires were first stretched along railroad tracks to convey messages — with the mysterious aid of lightning. The same year saw the publication of Isaac Pitman's "Phonography," which revolutionized shorthand writing and made stenography a less difficult and more common art. In 1838–9, the processes of photography were much improved by Talbot; the latter year is the date of the discovery of the daguerreotype. In 1846, the use of ether was first made known to deaden pain in surgical operations; and a year after, chloroform began to be used as an anæsthetic.

The enormous expansion of the industrial system in the first half of the century is hardly more remarkable than the wondrous transformation wrought by railways and steam ships.

Railways and Steamships

The immense extension of steam locomotion dates from 1830, beginning with George Stephenson's locomotive. This year is made memorable by the opening of the Liverpool and Manchester Railway. Before this, travelling had been slow and attended by many discomforts. A few years later, when the London and Manchester line was opened through its whole length (in 1838), trains reached a speed of thirty-seven miles an hour. In 1837, there were only 200 miles of railroad in England. Not long afterwards, the craze for railway speculation possessed all classes, and new lines were put into operation or planned all over the country. In 1847, the number of miles was 3,945; in 1852, it was 7,336. In the thirties, railway trains began to be used for the transmission of the mails. In 1838, steamships (using steam propulsion alone) first crossed the Atlantic — the "Great Western" making the voyage from Bristol to New York in fifteen days!

LATER REFORMS

The transition period from 1830 to 1850 is called "the epoch of reform," because it saw so many changes affecting the welfare of the people and the betterment of their condition. What of later reforms? Great as were the benefits of the Reform Bill of 1832, it had its limitations and defects. It altered the composition of the House of Commons, but England was still not, in the full sense of the word, a representative government, the upper and middle classes having control in public affairs. It was a disappointment to the common people, who demanded further political rights. In time their hopes were realized.

Further Political Rights demanded

Reform Bills of 1867 and 1884

Another wave of reform swept the country in "the sixties." The result was the Reform Bill of 1867, which enfranchised large numbers of workingmen, adding about a million voters. The Reform Bill of 1884 made the right of suffrage almost universal in the United Kingdom — only paupers, lunatics, and criminals being disfranchised. In 1830, the House of Commons represented nearly

500,000 constituents; in 1885, more than 5,500,000. During the last three decades almost everything asked for in "The People's Charter" has been granted, and by no sudden revolution. England is now, whether for weal or woe, "a government of the people, by the people, for the people."

Religious Liberty and Intellectual Progress

And these eventful decades have brought more religious liberty and intellectual advancement. Compulsory church-rates were abolished in 1868, and the Irish church disestablished in 1869. The burial-service enactments have been relaxed, and now freedom of conscience is enjoyed alike by Jews, Catholics and Nonconformists. By the Educational Act of 1870, English schools were modernized and wonderfully improved. The attendance has been greatly increased by the remission of fees since 1891,—82 per cent. of the elementary schools being free. For the year 1893–4, the total enrolment in the elementary schools of England was 5,235,887 pupils from three years to fourteen inclusive.

Reforms Gradual yet Fitful

The work of reformation in Great Britain has gone on gradually yet fitfully. For many centuries the ruling classes, the king and the nobles, resisted the will of the people and kept them degraded. They were compelled from time to time to make concessions and to remove one abuse after another, until the face of society has been changed. Conservatives have retarded progress, but in the end public opinion has borne them along. Reluctantly they have yielded to innovations, and have found their fears groundless. As a result, the England of to-day is very different from the England of former ages. The condition of all classes is vastly better than it was in "the good old times," which were not so very good after all when compared with the present.

EUGENE PARSONS.

THE WASHINGTON MONUMENT, PHILADELPHIA

IN the march of events on this Continent, thronged with many memories, it is gratifying to note that the Republic, which Washington did so much enduringly to found, turns every now and then, with the fervor of gratitude and patriotism, to the nation's first great ideal, with the view of paying further and higher honor to an immortal memory. The latest tribute to the illustrious "Founder of his Country" was paid a few weeks ago, at the unveiling by President McKinley of the noble monument to Washington, which the Pennsylvania State Society of the Cincinnati presented to the city of Philadelphia. The monument, which is one of the most elaborate as well as imposing ever erected in the United States, stands at the Green Street entrance to Fairmount Park in the City of Brotherly Love. It has been erected through the instrumentality of the Pennsylvania members of the historic and patriotic Order of the Cincinnati, an organization founded in 1783 by Revolutionary officers to perpetuate the memories of that great struggle among those who were engaged in it and their male descendants. The nucleus of the fund which has built the monument was gathered as far back as the year 1810, supplemented at intervals since, chiefly of recent years, and on the occasion of Lafayette's visit to this country in 1824, and on the one hundredth anniversary (1832) of Washington's birth. The union of these funds with those recently raised, together with accrued interest, has sufficed to meet the cost of the memorial, which is stated to be $250,000.

The monument was designed by a clever German sculptor — Rudolph Siemering — and represents an equestrian statue of George Washington on an immense pedestal of bronze placed on a granite platform or base. The figures and ornaments are all in bronze, and the monument as it now stands is forty-four feet high. At the corners are fountains representing four great American rivers, the Delaware, Hudson, Potomac, and Mississippi, with allegorical figures of Indians. These fountains are guarded on either side by native animals, all in bronze. From the platform rises a granite and bronze pedestal seventeen feet high, while, on the apex is an equestrian statue of Washington in the uniform of the Revolutionary army.

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V JULY, 1897 NO. 4

G. MERCER ADAM, EDITOR
MONTGOMERY B. GIBBS, BUSINESS MANAGER

HAWAII AND CUBA The annexation clamor has once more broken out among the Jingo element in national politics. As we go to press, Washington appears to be in a ferment over the prospect, which it furiously seeks to bring about, of Hawaiian annexation and instant intervention in Cuba. The impolicy and undesirableness of the latter step we have heretofore repeatedly pointed out; and, on the general question of annexation, we have dissented strongly from the idea of adding to the territorial area of the United States. With regard to Cuba, we have urged that the island, though in many respects blessed by nature, has been banned by man—that it is peopled by a turbulent, semi-barbarous native community, foreign to the political ideals and aspirations of the American people; incapable from its past history, with its interludes of bloody anarchy, of self-government; and by race and religion more akin to Mexico, or to one or other of the Latinized nations of South America, than to our free, progressive, and enlightened Republic.

The conditions are vastly different with respect to Hawaii; and in view of the fiscal difficulties between this country and it, and of the threatened aggression of Japan upon the Islands, the matter of acquisition, we admit, has to be deliberately weighed, though we do not say as yet seriously entertained. As an industrial and commercial nation, with immense capabilities and vast resources, the idea, we confess, is an alluring one of extending the ægis of the United States over islands in the sea, either adjacent to or in measurable proximity to this continent. The idea, moreover, receives encouragement in these times when among European Powers there is a lively wooing of colonies and an international scramble for new and distant markets. While this wave of colonial expansion is at present so strongly manifesting itself, it is not unnatural that this country should dally with annexationism, and especially so in regard to a community like the Hawaiians, who are now largely Americanized, and with whom we have already an extensive and increasing trade. But whatever selfish interests we may have, and however much the notion of annexation is fostered by resident American partisans or by Jingo intriguers at home, wisdom enjoins us to be slow in entertaining proposals for making outlying additions to our territorial possessions. This is especially incumbent upon us after the mistake this nation, or its local representative, recently made in upsetting established monarchy in Hawaii, and committing it prematurely to a change of dominion and rule. We have reason, moreover, at this juncture of our affairs, just after an offensive flaunting of the Monroe Doctrine in the face of one of the Old World Powers, to be on our guard against the counsels of Jingoism and the compromising action of the filibuster. Happily, political advocacy of a measure at Washington does not voice the calm judgment of the nation: if it did, we should at times be providing curious materials for history.

* * *

THE NEW CANADIAN TARIFF It is asserted that the tariff just framed and enacted by the Liberal Government, which has recently come into power in Canada, has been inspired by hostility to the United States. This, we are in a position to know, is not the case. Were it the fact, it would be contrary to the principles of Liberalism, which deems Free Trade the true economic theory for a nation; while it is inconsistent with all the overtures which the Liberal party in Canada have for years made at Washington with the view of securing Reciprocity. What has happened is this. The Liberals, on succeeding to power, were confronted not only with a heavy Dominion debt, but with an annual expenditure, which the previous Tory administration

had committed the country to, far in excess of the revenue. There was, therefore, need for continuing, for a time at least, the high tariff, and especially so, as the late government had called into existence a vast number of industries, dependent upon Protection, and which could not instantly be shut down upon without causing serious financial disturbance.

Despite the fact just mentioned, two Cabinet ministers paid a visit a few months ago to Washington to see what could be done to extend trade relations between the two countries; but as our own administration had just been installed, and were then engaged in constructing a new tariff, nothing was accomplished. It was then that the Canadian authorities undertook to revise their own tariff; and, at the instance of some imperialistic members of the government, they hit upon the idea of framing a preferential measure, favoring the trade of the mother country. The inducing motive for this was the great discrepancy in the volume of trade between the colony and Great Britain and the colony and the United States, as shown for a number of years past in the trade and navigation returns. In 1896, for instance, Canada sold to Great Britain of her exports, in round numbers, 66 million dollars worth, and to the United States, in the same year, only 39 million dollars worth; while from the former she bought 32, and from the latter 58, million dollars worth. The relation of these figures to each other will be seen at a glance; and the revised Canadian tariff has been framed with a view to reversing the situation. It has only to be added that the preferential offer to the mother country made by Canada is equally open to the United States, when this country can see its way to accept it.

* * *

MILLIONAIRES The age has its legitimate uses and, as it would seem, its place in the social scale for millionaires. Their functions, as an integral part of the community, may not be either high or beneficial; while evil generally comes of their ostentatious display of wealth. But in this age, with its opportunities for even the humblest to reach opulence, the acquisitions of a Crœsus soon roll up, and, given a few hundred thousands, it is easy for a shrewd man to enter into the possession of millions. Having attained great wealth, it may not be good manners for his poorer brother to ask him what he is going to do with it. Yet superabundant riches have their responsibility; and the more so, since it is universally admitted that it is labor that makes capital and in the making of it is often inadequately and disportionately rewarded. We trust that nothing will ever appear in these pages to encourage class enmity; but Socialism has a justification where the rich despoil or spurn the poor and are indifferent as well as obdurate to the cry of humanity. If society is to remain sound and the relations between man and man are to continue unvexed by either envy or resentment, the rich must do their social duty, and lay earnestly to heart the unmistakable, and often ominous, lessons of the time.

Naturally, one looks chiefly to the millionaire to befriend and aid those who deservingly are in need. By considerate and timely help these favorites of fortune can do much to soften the harsh lines of division between classes. Happily, many of them have begun to recognize their duty in this respect, and in this country, as well as abroad, we see wealth honestly, often nobly indeed, seeking to give good account of its stewardship. Mr. Iles, in his paper on "The Art of Large Giving," referred to in our issue of April last, shows us what superfluity is doing, with beneficial results, for the universities, art-schools, and eleemosynary institutions in this country. We have also in these pages recalled to the reader what our people owe to such benefactors of their kind as George Peabody, Johns Hopkins, Stephen Girard, and Peter Cooper, and how heartily the good work grows of copying their illustrious examples, in endowing institutions for the education and culture of the community or for the comfort and relief of distress.

Abroad the same happy infection spreads, and we see what deep purses readily open in response to the calls of humanity. Munificent are the daily amounts there raised for every worthy appeal to the heart. To the fund for the families of the victims of the Paris charity bazaar the Rothschilds gave the other day a million francs, while nearly a million pounds sterling have been subscribed in

England for the relief of sufferers from the Indian famine. A quarter of a million sterling has just come out of a single pocket for the victims of the Hansard Union; while, as a public gift, another Englishman donates, in one sum, two million dollars to the poor of a district in Derbyshire; and still another has given a cheque for £25,000 to the Princess of Wales' fund for a Jubilee dinner to the London poor. A princely sum is also mounting up in England as a Jubilee offering to the London charities and hospitals. These, with other numberless acts of beneficence showered on every hand, shows that the brotherhood of man is a real and not an empty phrase; while the feeling that prompts to such deeds deepens one's respect for our maligned human nature.

Only a cynic will question the motive that inspires these gifts, and say that some of them are prompted by ostentation or other ulterior purpose. In Old World communities where high social rank counts for much, and a decoration or a title is the chief lure of wealth, no doubt a vulgar vanity may seek its object by scattering largesse. But this is a species of human infirmity to which even the best minds are subject, and, admitting the weakness, it does not follow that in their benevolences there is no admixture of good. It would be unjust to say that Baron Hirsch's millions were lavished upon the objects of his heart from any unworthy ambition, or that a sinister purpose lay behind the philanthropy of Colonel North, the "nitrate king," or the princely bequests for scientific purposes of the Swede, Alfred Nobel, "the king of explosives." A Crœsus may surely be suffered to have a motive in his bequests as well as the miser, who, departing this life and knowing that he cannot take his hoarded treasure with him, leaves it as he wills. Even erratic testamentary dispositions of wealth are upheld by the courts, though that they come before them at all proves how unwillingly such are respected by the contestants of wills who conceive themselves defrauded. Ungratified expectation, in truth, often shows more of greed than does the accumulator of wealth, who has spent a sordid and toiling life from miserly motives, and for ignoble ends. Nor, even in this world, does it always fare well with the millionaire, if, like "the diamond king," Barney Barnato, whose meteoric career has just ended in suicide under the unhinging effects of loss of millions, one's riches are to take wings at the caprice of Dame Fortune. Envy the millionaire?—No! There are compensations for being poor.

* * *

THE DEADLOCK IN EUROPEAN DIPLOMACY

There is a pause in the negotiations between Turkey and the representatives of the Powers at Constantinople, and what will come of it we may not for a time know. An armistice, of course, is not peace, and in the situation of affairs, with the banner of the Crescent flying over Thessaly, the negotiations may come to nothing and the deadlock of diplomacy may be indefinitely prolonged. One fact is apparent as the outcome of the late struggle, viz., that Greece—"the spoilt child of Europe"—has been brought to her senses, and has evidently had enough of the glory of war and the cost thereof. For the future she is likely to be more amenable to the will of the European Concert, especially as without the interposition of the Powers her future existence as a nation would be in doubt.

What diplomacy will accomplish with the Porte is now the question of the hour, while negotiations are complicated by the presence of a fiery war-party in Constantinople, and by a very excited fanatical element among the Mohammedan population. At present diplomacy seems to have reached a state of deadlock, of which the Sultan and his advisers, in their Moslem guile, take every advantage; while the Czar appears to pull in one direction, and the German Emperor, in his inscrutable policy, appears to pull in another. The result is a condition of vacillation or drift. Meanwhile, Crete, the cause of the war, remains unpacified, with her grievances unredressed; and unredressed they will remain while the Turkish garrison, and Ottoman rule with it, are not ordered to withdraw from the island.

England, single-handed, will hardly take the responsibility, even if she were permitted to play a lone hand, of settling matters in the Levant. At present, she is engrossed more happily with her Jubilee festivities; but Lord Salisbury may be trusted to see that to the Turk are not given, with more Christian popula-

tions, any European extensions of territory. The moral power of Anglo-Saxon sentiment, in regard to making over to Turkish rule new European Provinces, the Sultan knows full well has to be reckoned with; and we should be sorry to see him, by playing off one Power against another, yielded to in this respect. What the armistice will result in, we should be a seer to divine. One thing seems clear: the period of its duration is indubitably too short for the work that has to be done.

* * *

OUR NEW ENGLISH AMBASSADOR ON SIR WALTER SCOTT

It is pleasant to turn from war to romance, and with our Ambassador at the Court of St. James pay homage, within the noble fane of the English-speaking race, to that chivalrous and pure-hearted soul whom we love to call "the wizard of fiction." Towards the close of May, an interesting scene was presented in Westminster Abbey at the unveiling of a monument, in the Poet's Corner, to Sir Walter Scott. Interest was given to the occasion by the presence, among many notable Englishmen of the era, of Colonel John Hay, of the United States Embassy, and by the able and sympathetic speeches of our Ambassador and the Hon. A. J. Balfour, the great Commons' leader. It may seem late in the day to honor Scott in the great Abbey, but hitherto there had been no memorial of him there, though his works, far and wide, had earned him immortality. The memorial now erected is a copy of the famous Chantrey bust at Abbotsford, reproduced by an eminent Scottish sculptor.

Than the gentle Sir Walter, no Scottish writer, it need hardly be said, is more worthy of honor, or deserves more fitly to be remembered in the historic shrine of the race, along with Shakespeare and the other great creators and moulders of our noble English literature. Under what climes are his novels and his verse not read, and how great is the debt humanity owes to his varied and beneficent genius! No fiction, certainly, is more pure and healthy than his, and no body of romance has in it more of the animating spirit and glamour of the past, or is richer in historic portraiture and stirring incident. The glow of his imagination lightens every page of his novels, and the fervor of his patriotism stirs every pulse of his reader's heart. In narration and description, Scott has never been excelled; while in imaginative and creative powers he has, in Shakespeare, only one peer. Than Scott's kindly face, as Colonel Hay observed, none in modern history was more familiar, save that perhaps of the first Napoleon. Nowhere, he truly adds, had Scott's writings received a more loving welcome than in America, where in the formative days of the Republic, Scott was a favorite author.

"The youth of America," continued the speaker, "revelled in Scott when the country was young. He had heard his father, who lived in Kentucky, say that they would saddle their horses and ride to adjoining counties to learn when a new volume was expected from the author of 'Waverley.' His influence was enormous upon the tastes and sentiments of a people peculiarly sensitive to such influences. The romance of Courts and Princes was vividly appreciated in the prairies and forests of the frontiers, where the power of democracy was supreme; and nowhere was the glamour of legend and tradition more keenly realized than in these half-reclaimed districts of the earth's surface. The author of 'Waverley' still kept his place in two hemispheres as the great master of imaginative narrative. Scott's ideals were lofty and pure; his heroes brave and strong; his heroines, whom he frankly asked us to admire, moved with womanly tact through his pages, pure of heart and delicate in feeling. Purity and loyalty were the undying elements of the charm with which this great magician had won the hearts of three generations. For this he had obtained the uncritical and ungrudging love of grateful millions. Though so many years had passed, his works were still read with undiminished interest and perennial pleasure, and his reward was in a fame which was still fresh and unhackneyed. He had invested with never-dying interest every changing aspect and scene on the face of Scotland, and his writings had been the source of a never-failing patriotism. His is a clear, high voice from a simpler age than ours, breathing a song of lofty and unclouded purpose, of sincere and powerful passion, to which the world, however weary and preoccupied, must needs still listen and attend."

EVENTS OF THE MONTH

Saturday, May 15.—The Washington monument, erected by the Society of the Cincinnati in Fairmount Park, Philadelphia, was unveiled; President McKinley made an address and reviewed the parade....Further reports from consuls in Cuba tend to confirm the reports of starvation and distress among American citizens in the island....Thomas F. Bayard, lately ambassador to England, arrived from Europe....It is feared that the presence of the Sultan's son in the jubilee procession in London will lead to disorder....The prices of the necessaries of life have doubled in Havana within a few days, owing to the depreciation of the paper money.

Sunday, May 16.—At a meeting in Washington, in behalf of the Cuban cause, a letter from Senator Chandler was read, in which he asserted that President McKinley would in good time register the decree that would liberate Cuba from Spain....A new extradition treaty between the United States and Brazil has been signed at Rio Janeiro....The Sultan of Turkey has made his answer to the ambassadors of the Powers, who have undertaken mediation between Turkey and Greece; the Sultan demands the retrocession of Thessaly and an indemnity of 10,000,000 Turkish pounds....The Turks began a general advance upon Domoko....Street cars ran in Toronto, Can., for the first time, the question having been settled on Saturday by popular vote, after many years' agitation.

Monday, May 17.—A programme for distributing relief to suffering American citizens in Cuba was drawn up at the State department....President McKinley received a special ambassador from the Shah of Persia, who delivered to the President an autograph letter announcing the accession of the Shah....The Turks attacked and occupied Domoko, compelling the Greek army, under Crown Prince Constantine, to retire after furious fighting; the Powers again asked for an armistice, ignoring the demands of the Porte, to which they will not accede....A dispatch from Moscow says the police have made sixty arrests, most of the suspects being men with university education, although working as mill hands, on a charge of planning a big strike; they will be sent to Siberia without trial.

Tuesday, May 18.—Secretary of State Sherman has formally notified the British government of the defeat of the arbitration treaty....The Sultan of Turkey, yielding to pressure from Russia, has ordered a cessation of hostilities against Greece, and the foreign ministers at Constantinople have been notified of his decision to arrange an armistice; the Greek Government has sent orders to the army to cease fighting.

Wednesday, May 19.—Documents made public at the State department show that in April, 1896, Mr. Olney offered the friendly offices of the United States in bringing to an end the war in Cuba and that the offer was declined by the Spanish government....The Sultan stated to one of the ambassadors that he is willing to modify the terms of peace, which were formulated under the pressure of irritation at fresh Greek attacks in Epirus....The United States bimetallic commission has arrived in Paris; according to the French premier, there is not the remotest likelihood of France taking the initiative in calling a monetary conference until Great Britain agrees to take part....Oscar Wilde was released from prison in London, where he served two years at hard labor.

Thursday, May 20.—The secretary of state sent to the Senate a protest from the German ambassador against the provision in the tariff bill for a discriminating duty on sugar....United States Senator Joseph H. Earle died at Greenville, S. C....Gen. Horatio King, postmaster-general under Buchanan's administration, died in Washington, aged 86....An armistice of seventeen days was agreed to by Turkey and Greece; it includes the land and sea forces, of both combatants....It is declared that Spain will never agree to the sale of Cuba, nor to foreign mediation....The Spanish minister of war has introduced a bill in the Cortes for an increase of the army in Spain to 100,000 men.

Friday, May 21.—The solicitor of the treasury has decided that American citizens who become subjects of a foreign government are aliens within the meaning of the immigration laws of the United States....By the entrance of Corea and the Orange Free State into the universal postal union, which has been announced to the postal congress at Washington, and the probable entrance of China before 1899, the entire postal circuit of the globe will have been accomplished....By a vote of 1,713 to 662 Cambridge university rejected the proposal to confer degrees upon women.

Saturday, May 22.—At the caucus of Democratic senators in Washington, it was decided to offer no factional resistance to the progress of the tariff bill....Judge Adams, of Chicago, rendered a decision making the city liable for riot damages to the extent of $1,500,000....Consul-General Lee reports that the number of American citizens needing relief in Cuba may reach twelve hundred....M. Hanotaux, the French minister of foreign affairs, made a statement as to the purposes of the Powers with reference to Greece and Turkey; Austria sent a warship to Athens to take off the royal family in case of necessity; a neutral zone has been established between the hostile armies in Thessaly....General Miles has been ordered to London to represent the army at the queen's jubilee.

Sunday, May 23.—The Yerkes telescope, the largest in the world, has been put in use at Williams Bay, Wisconsin....The Spanish minister of finance in submitting the budget proposes, in order to provide revenue, increased taxes and a loan on the security of the Almaden quicksilver mines....The Italian chamber of deputies rejected the proposal to abandon the Italian colony of Erythrea in the east coast of Africa.

Monday, May 24.—The United States supreme court adjourned until October, after rendering a number of important railroad and other decisions....The court in two cases involving the interstate commerce law, held that the commission has no power to prescribe rates on railroads which may control in the future....A cablegram from Vienna says the obstruction which has characterized the proceedings in the Reichstag

during the last few weeks culminated in an unprecedented scene.... The 78th birthday of Queen Victoria was observed.... The members of the United States bimetallic commission were presented to M. Hanotaux, French minister for foreign affairs.

Tuesday, May 25.— Stephen R. Mallory, the new Senator from Florida, was sworn in and took his seat in the Senate.... Elisha Dyer, of Providence, was inaugurated Governor of Rhode Island.... El Paso, Texas, was flooded by the breaking of the Rio Grande levee; the river had reached its highest point since 1891, and 120 houses were swept away.... The identical note of the Powers on the subject of the demands of Turkey upon Greece was presented to the Turkish government.... The Powers, including Turkey, have, it is said, assented to the appointment of Prince Francis Joseph of Battenberg as Governor-general of Crete.

Wednesday, May 26.— In an interview in Montreal, Marquis Ito said the talk in the United States about the desire of Japan to annex Hawaii is foolish.... R. E. Peary has been detached from duty at the New York navy yard, and granted five years' leave of absence; this action has been taken by Secretary Long to enable Peary to prosecute his Arctic explorations .... Great Britain will abandon the concert of the Powers if it is decided that the occupation of Thessaly by Turkish troops shall be prolonged until Greece pays the war indemnity. .... The Reichstag adopted a credit of 30,000,000 marks to re-arm the German artillery with improved field-pieces.

Thursday, May 27.— President McKinley has appointed Hon. Whitelaw Reid special ambassador of the United States at the queen's jubilee .... It is said Russia has informed the Sultan that he must renounce his impossible claim to annex Thessaly, and that Europe would not permit a renewal of the war with Greece.... The Greek government sent to the Powers a protest against the indemnity demanded by Turkey, and the rectification of the Greek frontier.

Friday, May 28.— Lyman J. Gage, Secretary of the Treasury, discussed the tariff and financial reforms in an address before the Commercial Club in Cincinnati.... The State department has received a protest from the Sultan against the appointment of Mr. Angell as minister to Turkey.... Four Irish members of Parliament were suspended for persisting in an irregular discussion of the financial relations of England and Ireland; the Irish Parliamentary party decided to take no part in the jubilee celebration.

Saturday, May 29.— The universal postal congress has made several important changes in the convention signed at Vienna in 1891, and the modifications will go into effect on January 1, 1899.... The jubilee festivities were set going in London by a brilliant banquet and reception given by Lord Salisbury.... A panic caused by a fallen candle in the cathedral at Pisa resulted in the death of seven persons and the injury of seventeen others.... Li Hung Chang has issued an edict sanctioning the loan of a Belgian syndicate for railroad construction in China.

Sunday, May 30.— Turkey has not made formal objection to Dr. Angell, who will succeed Mr. Terrell as minister, but certain inquiries as to his record have been made and explanations offered by the State department which, it is believed, will satisfy the Turkish government.... Prince Louis of Savoy arrived in New York on his way to attempt the ascent of Mount St. Elias, in Alaska.... The correspondent of a London newspaper says there is indubitable evidence that Premier Ralli and his colleagues in the cabinet are gravely implicated in a plot to overthrow the dynasty.

Monday, May 31.— President McKinley attended the memorial day exercises at Arlington cemetery.... The battle monument at West Point was formally unveiled; the oration was delivered by Justice Brewer.... A slight earthquake occurred, the vibration lasting about five minutes, being from Washington, D. C., south to Georgia, and in Ohio, Indiana, Kentucky, and Tennessee.. The Sultan has agreed to a renewal of the armistice for a fortnight, beginning May 30.

Tuesday, June 1.— The comparative statement of the Government receipts and expenditures during May shows that the total receipts were $29,797,390, and the expenditures $29,109,259, leaving the surplus for the month $688,131; the statement for May, 1896, showed a deficit of $3,782,875.... The monthly statement of the United States public debt shows that the debt, less cash in the treasury, at the close of business on May 29, 1897, was $996,684,052, a decrease for the month of $1,560,080, which is principally accounted for by an increase of over $2,000,000 in cash in the treasury.... The Japanese loan of $22,000,000 at 5 per cent., and payable in gold, was subscribed several times over in London.

Wednesday, June 2.— Whitelaw Reid, representative of President McKinley during the queen's jubilee, sailed from New York.... Secretary of the Treasury Gage declined to dismiss efficient employees at the Philadelphia mint and fill their places with old soldiers, who were dropped by the last administration.... Mr. John R. McLean will be a candidate for the United States Senate from Ohio, and will give Mr. Hanna a hard fight .. The resignation of the Spanish Cabinet has been tendered to the Queen Regent... The Turkish government has opened negotiations with an English firm for overhauling the entire Turkish fleet.

Thursday, June 3.— The gunboat "Princeton" was launched at Camden, N. J... Commissioner Calhoun left Havanna for the United States.... The Peace Conference, composed of the ambassadors of the Powers and the Turkish minister for foreign affairs, began its sessions in Constantinople.... After a lengthy Cabinet council at Madrid, at which Premier Canovas made an explanation of his position, the Queen Regent requested him to remain in office.

Friday, June 4.— The President nominated Lawrence Townsend, of Pennsylvania, to be minister to Portugal, and Ellis H. Roberts of New York, to be Treasurer of the United States .... The State Central committee of the Populist party of Washington has issued a manifesto to the effect that hereafter the party will stand by itself, and fight its own battles.... The British Parliamentary committee, inquiring into the Transvaal raid, adjourned... It is stated in Paris that the French government is friendly to

the American bimetallic mission, but that nothing tangible will be done beyond expressions of sympathy, and the assurance that the matter will be seriously studied.

Saturday, June 5.—The President nominated Andrew D. Barlow, Missouri, to be consul-general at the City of Mexico; Harold S. Vanburen, New Jersey, consul at Nice, France; Carl Bailey Hurst, District of Columbia (now consul at Prague), consul-general at Vienna; Louis A. Pradt, of Wisconsin, to be assistant attorney-general....A sea armistice between Greece and Turkey was signed; memoranda of the peace proposals were submitted by the ambassadors of the Powers to the Porte....The Irish National league passed a resolution calling on Irishmen to refrain from taking part in Victoria's jubilee.

Sunday, June 6.—The Democratic leaders are reported as having decided to avoid national issues in the local and State campaigns next fall....The Queen Regent of Spain has confirmed Señor Canovas in power, and the Cabinet and policy will remain unchanged.... It is reported that armed Bulgarian bands have crossed the Turkish frontier....A cloudburst in France caused the destruction of property worth 10,000,000 francs.

Monday, June 7.—G. Creighton Webb and Erskine Hewitt have been appointed additional secretaries to the special embassy appointed to represent the United States at Queen Victoria's jubilee ceremonies....The Standard Oil Works in Cleveland were shut down for an indefinite period....A cablegram from Madrid says the Liberals call Señor Sagasta a traitor, accusing him of secretly refusing the Queen Regent's request to accept office....Turkey is still sending reinforcements to Thessaly, and the foreign ambassadors are demanding an explanation.

Tuesday, June 8.—The President nominated Henry M. Hoyt, of Pennsylvania, to be assistant attorney-general....It is reported from Chattanooga that an English syndicate has options on all the coal mines and lands in East Tennessee and Southern Kentucky, along the Cincinnati Southern railroad....The Powers show no signs of yielding to the Turkish demands....The correspondent of the Associated Press at Havana states that there are 8,000 armed and organized insurgents in the country.

Wednesday, June 9.—The United States cruiser "Marblehead" has been ordered to the waters off Cape Breton, to prevent American fishermen from violating the regulations of either the British or American governments.... The President nominated Henry L. Wilson, of Washington, to be minister to Chile; William F. Powell, of New Jersey, minister to Hayti; John G. A. Leishman, of Pennsylvania, minister to Switzerland....The Powers have submitted to the Turkish government a memorandum regarding the terms of the peace treaty with Greece; it now rests with the Porte as to whether peace will be concluded speedily or not.

Thursday, June 10.—Mr. John W. Foster's mission to Russia to arrange for the protection of seals in Bering Sea is said to be meeting with sympathy and support in official circles in St. Petersburg....It is announced that negotiations for a treaty of commerce between Spain and the United States have reached an advanced stage ....It is now believed that Turkey will agree to withdraw her troops from Thessaly; this change of front is said to be due to counsels from abroad....The gunboat Suarez, of the Uruguayan navy, landed troops on the Argentine coast and sank a vessel flying the Argentine flag....The Empress of Russia gave birth to a daughter.

Friday, June 11.—A telegram received at the war department stated that all is now quiet among the Indians in southern Montana, and that it is safe to withdraw the troops sent from Forts Custer and Keogh, which will be done ....President McKinley and party arrived at Nashville, Tenn....A further adjournment of the peace conference has taken place at the request of the Turkish minister for foreign affairs, on the ground that the Sultan has not yet decided the question of the retention or occupation of Thessaly....President Barrios has personally confirmed the dispatch stating that he had declared himself dictator of Guatemala.

Saturday, June 12.—The President spent the day in Nashville, Tenn., paying another visit to the exposition, where Cincinnati day was celebrated....The Republican Senators held a caucus on the Hawaiian reciprocity treaty; it was said that President McKinley is about to negotiate a treaty of annexation....The Most Rev. Francis Janssens, Roman Catholic archbishop of New Orleans, is dead....The Colonial Premiers were guests of the Liverpool Chamber of Commerce at a banquet....Ambassador Hay is said to have induced the English government to modify its attitude on the Bering sea sealing question....The Sultan has appealed to the Czar and Emperor William to support his claim to annex Thessaly to the Ottoman empire.

Sunday, June 13.—The floods in New England this week caused a loss of nearly a dozen lives, and damage to railroad and mill property estimated at $500,000....An attempt was made upon the life of President Faure, of France, by the explosion of a bomb....Uruguayan revolutionists captured a river steamer with reinforcements for the government forces on board.... It was rumored in Paisley, Scotland, that an American syndicate would build mills to compete with the thread monopoly.

Monday, June 14.—It is reported that a treaty for the annexation of Hawaii to the United States will be sent to the Senate soon after the return of the President from the South.... The exports of domestic merchandise during May amounted to $76,302,082, as against $64,587,491 in May, 1896; the imports amounted to $79,321,827, an increase over May, 1896, of over $22,000,000....The final ratification of the boundary treaty between Great Britain and Venezuela was exchanged at the State department....The Masonic meeting in Royal Albert hall, London, in commemoration of the queen's diamond jubilee, was attended by 10,000 Free Masons in gorgeous regalia; the Prince of Wales announced that the admission fees for the ceremony amounted to $35,000, half of which would go to the Prince of Wales hospital fund, and the other half to the different Masonic charities....Barney Barnato, the South African "diamond king," who was a passenger on the steamer "Scot" from Cape Town to Southampton, committed suicide by leaping overboard; his body was recovered.

INQUIRIES ANSWERED

Will you please tell me, in your instructive magazine, what precisely is the cause of the present war, now suspended by an armistice, between Greece and Turkey?

The cause of the present war between Turkey and Greece is the rising in arms against Moslem rule of the Christians in Candia (the ancient Crete), an island in the Mediterranean lying immediately to the south of Greece. In the article on the "Recent History of Greece," in the Encyclopædia Britannica, Vol. XI., pp. 125, 126, you will find an account of the struggle of Greece for independence (proclaimed in 1822 and gained in 1829), and of the conflicts between Greece and Turkey while the former sought to throw off the Mohammedan yoke. Crete, which has been successively held by Greeks, Saracens, Venetians, and Turks, was in 1830 ceded to the Pasha of Egypt, but ten years later was restored to Turkey. Against Turkish dominion the Christian Cretans have always rebelled and have repeatedly risen in insurrection and called upon the European powers for intervention. Hostilities broke out in 1866 and lasted for two years, when the Sultan granted the demands of the Islanders. This promise, however, proved illusory, for the Turks did not keep faith with the Cretans, and another rising took place in 1877, and union with Greece was decreed by the people.

In consequence of British intervention, Crete was temporarily pacified on the understanding that Turkey would grant the island self-government. The Parliamentary system was, however, curtailed and the Cretan Christians were so badly used that there was a religious outbreak in 1884, followed by a continued period of anarchy and racial and sectarian strife. To the appeals of the Cretans for reforms and especially for a Christian Governor, the Sultan paid no heed, and in 1889 another insurrection occurred. Tranquillity was partly restored by the presence of a large force of Turkish troops, but discontent smouldered until last year (1896), when the Cretans once more rose in arms, and Greece intervened by sending troops to the island, and the European powers took up the Cretan grievances and submitted a scheme of reforms to the Porte. The scheme demanded, among other things, fiscal independence and the appointment of a Christian Governor. Though the scheme was accepted by the Sultan, the Cretans, tired of Turkey's previous breaches of good faith, refused to lay down their arms, and having the support of Greece they have continued to defy the Moslem power. Meanwhile, the Powers sent their ships into Cretan waters for the protection of life and property, and engaged to secure for the island an effective autonomy, under the suzerainty of the Sultan. Despite this action of the Powers, Greece permitted, and from all appearances abetted, the irruption of bodies of irregular soldiery across the frontiers of Thessaly; which the Turks construed into a cause of war and sent an army to resist and repel invasion. The Turks, outnumbering the Greeks and being better armed and led, have won, and the Powers have intervened to stop the war.

A young lady friend of my family is about to graduate and has been given the subject "Open-Sesame!" as the theme of her essay. She asks for some explanation of the phrase and an outline of its treatment. May I ask you for some hints on the subject?

The following is briefly in reply to our correspondent's inquiry:

"Open-Sesame" (o′pn-ses′ a-mē) is the charm or form of words by which gates, barriers or obstructions may be opened and access or free passage gained. It is the charm by which the door of the robbers' dungeon flew open in the tale of the "Forty Thieves," in the "Arabian Nights' Entertainments." Its use in literature as a phrase is indicated by the following two quotations:

"Laughing, one day she gave the key,
My riddle's "*open-sesame*."

"These words were the only *open-sesame* to their feelings and sympathies."

It is a capital phrase not only to conjure with, but for one to use who stands, in youth, at the threshold of all knowledge and commands the gates of enlightenment and attainment to open to one. To the youth also, who is ambitious to make his way in the world, it is a compelling and commanding phrase to use. Of course, it is only by effort, often painful and prolonged effort, that we acquire learning or gain those stores of information and knowledge which lie before, and seem to lie beyond, us in our earlier years. But while we use the utmost diligence and assiduity and spare ourselves no trouble or labor, it is well to confront any difficulties we encounter by the cry "open-sesame!" so that we may bring our hearts and wills to that pitch of enthusiasm and endeavor that will best carry us through our difficulties and enable us to enter into possession of what we seek to know or acquire.

1. Why is the year 1900 not a leap-year?

2. Which of the two following sentences is correct: "He has loaned me his German Grammar," or "He has lent me his German Grammar?"

1. 1900 will not be a leap-year, since it does not conform to the Gregorian rule of intercalating an extra day into the year, making 366 days, and giving February of that year twenty-nine days. The rule is thus set forth: Every year of which the number is divisible by 4 without a remainder is a leap-year, excepting the centesimal (or hundredth) years, which are only leap-years when divisible by 4 after suppressing the two zeroes. Thus 1600 was a leap-year, as 2000 will be; but 1700 and 1800 were, and 1900 will be, common years.

The necessity for the intercalated year is due to the following fact: The Gregorian calendar reckons the year as 365¼ days, and to make provision for this quarter of a day one whole day must be added every four years. The real length of the year is however eleven minutes and fourteen seconds less (or precisely 365 days, 5 hours, 48 minutes, 46 seconds), and in 400 years this overplus of our present calculation amounts to about three days. Therefore one intercalated day must be suppressed every 400 years. Another somewhat similar rectification becomes necessary every 4000th year, but that need not in our time be here gone into.

2. Either of the two sentences is correct. The latter, however, is the preferable form, loaning usually being a commercial or financial term applied to money, as "he has loaned me fifty dollars." We say "He has lent me his aid or countenance," and "loaned me the use of his name."

Please give me a description of the Pansy as to its native country and origin.

The modern popular garden flower known as the pansy, or heartsease, has been so long cultivated that its source is a matter of uncertainty to botanists. As we now see the pansy, it is a purely artificial production, differing considerably from any wild plant known. By some botanists it is supposed to be merely a cultivated form of the *viola tricolor*, a native British cornfield weed, while others assert it to be the result of hybridization between the viola tricolor and other species of the same family.

As florists and gardeners conduct their experiments without scientific method and record, it is, unfortunately, not possible to arrive at any definite conclusion as to the real origin of the flower. Mr. Darwin confesses himself to have been "foiled in the attempt to unravel the parentage of the pansy." Experiments, however, go to show that seeds of the wild viola tricolor will produce forms so like those of the modern cultivated pansy that it has been reasonably assumed that that flower has originated from the wild plant by continuous selection. The modern garden varieties of the pansy have, therefore, sprung from the native British viola tricolor, which has probably been crossed with some of the allied species of the large and varied genus. The changes that have been effected from the wild type are more striking to the eye than really fundamental. Increase in size, an alteration in form, by virtue of which the narrow oblong petals are converted into circular petals, and variations in the intensity and distribution of color—these are the changes that have been wrought by continued selection, while the more essential parts of the flower have been relatively unaffected.

The modern varieties of garden pansies consist, in the main, of three types:—the show varieties; the fancy varieties, obtained a few years ago from Belgium, and now very much improved by cultivation; and the bedding varieties, which are the free-blooming sorts, marked rather by effectiveness of color in the mass, than by quality in the individual flower.

I wish to gain some general notion in regard to the gold and silver mines of Mexico, in addition to what I have learned from the Encyclopædia Britannica. Pray give me, in brief, any information you can on the subject.

Mexico is rich in gold and silver mines. The northern and eastern section of the province of Sonora contains the "gold pocket" of the Spaniards. The Sierra Madre range of the Cordilleras is known to hold immense deposits of gold and silver and they have already yielded fabulous sums. Unworked mines stretch up and down its entire length, on both declivities. So far only the surface mines have been worked and these with the simplest utensils. On a branch of the Sonora River four leagues from Arispe are two immense silver mines, "Babiconora" and the "Grenadita." The St. Domingo is near by. These mines are being worked by Frenchmen. Four leagues to the east of Arispe is the famous gold mine "St. Rosalie." Incredible stories are told of the richness of this mine. It is said to have presented the Church of Arispe with a hundred thousand dollars in gold ornaments. This mine, like so many other Mexican mines, cannot be worked because of the ferocity of the Indians living in the fastnesses of the mountains bounding the Gila

River. The Mexican government is powerless to punish this nation of Apache savages. The banks of the San Pedro River are rich and full of gold ore. The high tableland of Buenos Ayres (Strong Wind) is one vast gold mine. Pieces weighing from seven to ten ounces are not uncommon, while lumps have have been found weighing from one to two pounds. It is said that excavators here only search for lumps and do not stop for ore hard to get or shiftings. Gold is scattered in abundance throughout Hermosillo, Magdalena and Attar and as far north as the Gila River in Arizona. One league from Bat mine is the old silver mine "Los Llanos," now deserted but immensely rich and quite accessible. Three leagues to the north of the San Miguel River at Santa Ana is the old gold mine called by the Mexicans "The Gold Mine of the Ancients." So great is its fame for richness that it is said to be a mine of pure gold. It is in the midst of the district presided over by the redskins, and before it could be wrought they would have to be bought off or otherwise treated with. Very near to this mine is a deserted silver mine of great promise.

Will you kindly give me, through the pages of "SELF CULTURE," the names of the chief New England writers of Fiction since the period of the Civil War? Also, please give me the name of any work dealing with noted American scientists.

1. Margaret Deland, Kate D. Wiggins, Mary E. Wilkins, Adeline D. Whitney, Constance Fenimore Woolson, Elizabeth Stuart Phelps, Harriet Beecher Stowe, Sarah Orne Jewett, Blanche W. Howard, Rose Terry Cooke, Helen Jackson ("H. H."), Louise Chandler Moulton, Harriet Prescott Spofford, Theodore Winthrop (d. 1861), Thomas Bailey Aldrich, Oliver Wendell Holmes, Julian Hawthorne, Arthur S. Hardy, Edward Everett Hale, Donald G. Mitchell (I. K. Marvel).

2. "Pioneers of Science in America," edited by Dr. W. J. Youmans, editor of "Popular Science Monthly." D. Appleton & Co., publishers, New York, 1896.

I have seen it stated that Clay's "Omnibus Bill" of 1850 provided that California should be admitted as a slave state. Is this correct?

Hardly. What Clay's compromise resolution proposed was, "That California, with suitable boundaries, ought, upon her application, to be admitted as one of the States of the Union, without the imposition of any restriction by Congress in respect to the exclusion or introduction of slavery within those boundaries." The bill provided at the same time for territorial governments in New Mexico and Utah, without express restriction upon slavery.

I should esteem it a favor if you would supply me with a few concise points on the negative side of the question, "Resolved: That great cities are unlike the smaller towns — dangerous to the people of a nation."

1. The large city is a centre of trade and of various industries, which are brought to a state of greater perfection than can well be the case in a small city.

2. In the constant intercourse and action of mind on mind there is produced a development of thought and a perfection of accomplishment not possible in small cities.

3. The large city is a centre of human action and interest, and is, therefore, the propagating ground for the production and rapid growth of good works.

4. The intensity of enthusiasm transmitted from one worker to another, in affairs affecting the general welfare of the community, heightens the zeal and earnestness, and produces greater results.

5. In large cities the results of human activity are found in the most perfected stages. Good is seen in its best forms and evil in its worst; the two may therefore be contrasted, to the great advantage of good. The bad results of evil may be shown and rooted out.

6. A large city may be considered in its various aspects, commercial, political, social, intellectual, moral and religious. In the concentration of all it comprises is found its large power and influence. But the character of its power for good or evil is dependent on the prevailing character of its inhabitants. The large city, as such, is a necessity of civilization. It is an index of the height and character of the civilization of a nation.

7. In a large city the evil attracts more attention and is more written about and advertised and made to seem greater than the good. Much that is good is hidden and never known. Public spirit rises to a great height in large cities. Concentration of capital calls for philanthropy, public improvements, parks, monuments, drives, institutions of learning, libraries, art galleries and the various other public works which are the pride of the nation and the government.

I would like to know whether I can study physics by the use of a manual, and without the aid of a teacher. Pray

give me your opinion on the point. Also kindly recommend me a microscope that will be useful in the study of botany.

We think you can pursue the study of physics very well by yourself and without the aid of a teacher. If you possess yourself of a good text-book on physics such as are used in the schools you should be able to make your own unaided way in the subject. If you are to teach physics it would be well for you to use the same author in studying the subject as you are to use in teaching it. Together with the text-book, the Encyclopædia Britannica will be of great benefit to you, as the subjects are there explained and illustrated in detail, which in the text-books are given only as statements. By using the "Guide to the Britannica" you will find the references in their proper order, and may thus look up each subject in the Encyclopædia as you go along in your text-book.

The microscope which is recommended by professors in the high schools for the study of botany is the "Student," a microscope manufactured and sold by Joseph Zentmayer, Philadelphia. It is said to be peculiarly suited for the study of botany, and in cases where greater accuracy is required it may be attained by a fine adjustment of the parts of the instrument. We cannot tell you the price of the instrument, but this may be learned by writing to Joseph Zentmayer, Philadelphia. The outfit consists of various parts, objectives and accessories, which are represented in the catalogue with plates and prices.

In my town we are constantly troubled with tramps, so much so that I have brought the subject up in our debating circle. May I trouble you to give me some thoughts on the question "whether or not tramps should be fed?"

1. Tramps are a dangerous element in our society, and how to deal with them for the best good of humanity has ever been a problem.

2. Tramps, or that portion of humanity who in some way live upon and are supported by the better portion of society, may be divided into three classes. As paupers, they are fed and clothed and sheltered at the public expense. As beggars or tramps they demand to be fed at one's door. As thieves they help themselves to whatever they are cunning enough to steal or strong enough to take away.

3. In any of these forms the class is always a burden to industry and a menace to property.

4. By far the greater portion of tramps are so because of evil instincts and propensities, acquired vicious habits, and from innate laziness and thriftlessness. A very small portion remain in this condition from inability to fight successfully the battle of life.

5. Remaining in this state they transmit their propensities and instincts to coming generations.

6. Statistics from New York, Pennsylvania, and other largely populated states show that their reformatories and county jails contain inmates whose parents have been tramps for three generations back. The instincts are thus inherited.

7. Our present state of civilization would not have been possible, it is thought, if the growing element of tramps in the seventeenth century, then classified as "failures," had not been subjected to the "weeding out" process by measures, which, though harsh, were effective in clearing the way for progress.

8. The beggar and pauper instinct was greatly developed in feudal times by misdirected religious sentiment. The Christian Church taught and preached mercy to the sick and unfortunate. This was one of the most beneficent outgrowths of Christianity, but it had its attendant evil influences, for beggary was made morally respectable by the methods of the Roman Catholic Church and the example of the mendicant friars. Indiscriminate alms-giving was taught as one of the noblest virtues. This Christian sentiment was perverted and became the means of lessening the responsibility of every man to take care of himself. Tramps, today, take advantage of Christian charity.

9. If some strong measures are not taken to redress the growing evil of trampdom; if tramps are allowed to continue and breed unchecked and to prey upon the industrious the while, there is reason to believe that mendicity will gather strength and threaten our political system, and even, it may be, our civilization.

10. The habit of some kindhearted but thoughtless person to give every beggar a "regulation penny" or something to eat at the door, does an immense harm to society and fosters the institution of tramps; and as long as tramps know that they can get their living that way they will not fail to resort to it.

Please discuss the question in your instructive magazine, "Resolved: That eloquence is a gift of nature." I am on the affirmative side of the debate.

It may perhaps be said that eloquence is a gift of nature or temperament, as, now and then, a great genius arises who thrills an audience as by a spell of magic and yet seems unconscious of his power. But we believe that eloquence is in the main an art, which has to be acquired by persistent effort. The result will

be to a greater or lesser degree successful, according as the person is or is not naturally gifted. Elocution is an art, and all arts have their basis in, and grow out of, scientific principles. These principles give life and significance to art and determine the form of its expression. Of these principles the artist may be unconscious, though he live in his work; they serve as a guide for those lacking the fire of genius; and when revealed to the understanding they give added skill and power. The highest art should be estimated by the effects which are produced; and the principles which underlie the method, when formulated and systematized, constitute the theory or philosophy of art. Art may begin (it usually does) unconscious of the principles which guide the artist; it is the soul which asserts itself spontaneously, but it attains its highest achievements only by a discovery and a conscious apprehension and appreciation of these principles. This is especially true of eloquence.

The great orators of antiquity, no doubt, had clear conceptions of the means by which their efforts were produced. In those days the art of oratory was taught and studied, and the great orator was the result of training and culture as well as of natural gifts. Cicero and Quintilian, both distinguished in oratory, have left on record their views of the methods of training required to produce an eloquent and effective speaker; and in every subsequent age the distinguished orators were products of education and practice. It has been said that there are three elements entering into effective eloquence: mental, vocal and physical. The mind is the source of all expression. The voice must be trained to be a faithful reflection of the soul. Every tone in natural expression is instinct with spiritual life, and all the variations in vocal expression are but a reflection of the varied shades of mental action. The physical element appeals to the eye and impresses the mind of the hearer through the sense of vision. The mind speaks through form and motion as well as through the voice, and the human form is the medium of this visible speech. True eloquence is but a revelation of the inner spiritual nature and assumes that the highest principles of the art have their origin in the human soul. The final object of the art of elocution is to enable man to reveal the thought and feeling and purpose of his own soul and reproduce these in the souls of others. It was Cicero who said: "As the grace of man is the Mind, so the beauty of mind is Eloquence."

I should be glad if you can give me any idea as to the professions or business pursuits of members of Congress. I mean what proportion are lawyers and what proportion are business men?

It is difficult to make an accurate analysis of the professions represented in Congress as a whole, and show what percentage are business men and what professional. The Senate is largely composed of lawyers, graduates of law departments of Universities, who have received a political appointment before engaging as practicing attorneys. Of these, there are in the present Senate sixty-three members; of editors of newspapers there are three; and one only is a physician and surgeon. Three have had military educations, and have held military appointments, while twenty-two are engaged in mercantile pursuits, in manufacturing, stock-raising, banking, etc., or have retired from such pursuits.

A much larger percentage of the Representatives are men who follow business avocations. In reading through their biographies one finds nearly every industry represented. Many members from the Western States are farmers, miners, or newspaper editors. About three-fourths of the members of the Lower House are graduates of law schools.

The biography of each member of the present (55th) Congress is found in the new "Congressional Directory," issued by the Government Printing Office, Washington, D. C., and may be procured at any good book store or seen at the public libraries. See the special edition, issued to March 11, 1897.

I ask the help of SELF CULTURE in preparing a paper, to be read at our Reading Circle, on the subject of the "Influences surrounding Child Life." Kindly give me a few ideas on the topic.

Balzac, the eminent French novelist, observes: "Children are more influenced than we imagine by the invisible effect of ideas. They have ears like the very spies of Nature herself, eyes that penetrate all subterfuge and pretense. It is good to set before them the loftiest ideals in human life, but the best ideal of all has to be portrayed by the parents in the realities of home life. The teaching that goes deepest will be indirect, and the truth will tell deepest in them when it is overheard. When you are not watching, and the children are—then is when the lessons are learned for life."

The chief aim of every parent, teacher or friend of children should be to call into vigorous activity the spiritual or higher life of the child while he is still young, to awaken love for the noblest and best, ere sin, passion, and animality harden, crust over, and encase the soul.

Children are continually under the spell of influences, which are frequently as subtle as they are enduring in effect, and life-moulding in their character; influences which cast the deciding weight in the balance of life, giving supremacy to the animal or spiritual dominion. When parents and teachers appreciate the soul-moulding power of the high and pure ideal, they will make great effort to fill the juvenile mind with pictures which will develop the divine, so that the low, base, and selfish impulses will shrivel and shrink in the presence of that which is good and beautiful. One of the most efficacious ways of doing this is to tell them stories of the noblest, grandest, and bravest lives which have from time to time blossomed forth in the world, instead of those that have caused the earth to flow with blood. Tell them stories of characters, illustrating sweet human love and sympathy; take also the lives of moral and intellectual heroes as models, and dwell upon each in such a way as to make the child fall in love with virtue, justice, and truth.

The story of Epictetus, the slave and cripple who became a great philosopher, and whose life was one of patience and unselfishness; the story of Socrates, how he died, why he was put to death, or rather, why he came to take poison, and what he taught; the story of Florence Nightingale, and of Dorothy Fox. These and others of similar virtues cannot fail to be an inspiration to the youthful mind. Unfold to them the great pages of history which have shaped civilization. Teach them to draw pure pleasure from the beauty of flowers, fields, and streams, and awaken in them that deep and reverential love for Nature and her art which is essentially a religious passion, and which at all times inspires elevated thought and directs in the path of moral rectitude.

We are speaking here chiefly of home influences and environment, for while children, it is true, receive impulses and tendencies at school, their characters are in great measure formed at home. One should always keep in mind in surrounding the young members of a family or community with wholesome influences that the primary end of all education and training is the complete development of a sound childhood into a perfect manhood and womanhood, and every detail which affects child-growth and character-formation, companionship, amusements, occupations, books, and every environment which affects character for better or worse, is worthy of consideration.

In a forthcoming debate I am asked to take the affirmative side of the question, "Resolved: That the Indian has more ground for complaint than has the Negro." Please favor me with some arguments on that side of the discussion.

1. The negroes have been accorded more humane treatment than have the Indians by the white man.

2. The Indians were natives of the soil; they were in a sense self-supporting and asked no favors from any one, but pursued the even tenor of their lives, save when on the warpath. The white man came and invaded their dominions, robbed them of their lands, and made them, as it were, outlaws in their own country.

3. The negro, though he did not come to this country from choice, escaped from degrading and barbarous conditions, compared with which even slavery in America was a great elevation. Negroes have from time to time been made objects of sympathy and philanthropy, and in plantation life were given homes and sustenance in return for their labors.

4. The Indians, because of their proud and independent natures, were neither considered nor cared for. They were persecuted and hunted in their own woods; their homes were violated, and their burial-places desecrated by the white settler's ploughshare.

5. The negro is, generally speaking, inferior to the Indian in character and capabilities. Lack of virtue, courage and morality if not inherent, is too often manifest, in the negro, as in most subject races. He is easily led by superstition and is generally incapable of anything but the simplest education. When left to themselves, and without the encouragement and aid of the higher races, negroes have fallen back into barbarism.

6. The negro when given enfranchisement has proved himself little worthy of citizenship. He shows no independent political judgment and is easily led by political demagogues. The reconstruction government, controlled by negroes, was marked by reckless expenditure and theft, though this perhaps was incident to the inchoate state of things in the South after the war.

7. If only a small proportion of the solicitous attention expended upon the negro had been given to the Indian, many of them who now remain in degradation, or whose tribes have become exterminated, might have been redeemed to civilized life.

8. The Indians, though not made actual slaves, are made to suffer the more from neglect, because of not receiving the humane treatment which must of necessity be accorded to the negro, in order to capacitate him for performing his duties as a laborer on the soil.

9. We are not merely encroaching upon their territory, driving them from their homes, and

destroying them by repeated violations of all natural and national law; but we are damning their reputation as a race. We are by every means degrading a proud and non-complaining people, and crushing out their self-respect, and stultifying the honor, which, to the true Indian, is always precious.

10. There must be some radical error in our treatment and dealings with the Indians since it is admitted by every intelligent observer that, as a rule, the Indians in their morals and vices are more degraded, more hardened and debased, than they were in their original barbarism.

11. The slight traces of moral benefit which are the result of the scanty missionary labors are more than overbalanced by the depravity and vices which have been introduced into their midst in their relations with the lowest class of civilized whites.

Will you kindly give me a few principal points to enable me to argue the negative side of the debate, "Resolved: That the signs of the times indicate the downfall of the Republic of the United States."

1. The enormous advantages of our institutions are underrated, or superficially viewed, by those purporting to see indications of a future downfall of our Republic, and the dangers of unavoidable evils in government are as greatly magnified. Our institutions, political, religious and social, it may be said, are second to none in the civilized world. They unite the advantages of English institutions with a greater individual freedom. The Constitution of the United States is peculiarly strong, the power being in the hands of representatives of majorities judiciously chosen. "It deserves the veneration," says a high English authority, "with which Americans have been accustomed to regard it, since it ranks above every written constitution for the intrinsic excellence of its scheme, its adaptation to the circumstances of the people, the simplicity, brevity and precision of its language, and its judicious mixture of definiteness in principle with elasticity in details." There is no feature in any system of government that ever existed, or ever can exist, which is not capable of abuse and not open to some objection. A perfect political code has never yet been discovered, and many arguments can be presented against some of the features of the best of them.

The only ground on which the machinery of any government is acceptable to those governed is one in which its merits overcome its defects; so that while not free from blemish, and not all that could be desired, it is, upon striking a general balance, the best attainable. When we do not fix our attention upon the bad exclusively, and contemplate our own systems and institutions, in comparison with those of other governments and conditions which the world has known, we can look with satisfaction upon our own, not as perfect, but as one in which the advantages more largely preponderate over the disadvantages, and one which has had incorporated into it at its inception the largest capability for gradual improvement, progress and stability which the experience of time has taught mankind.

2. The supreme court is an element of great strength to the government, in "guarding the ark of the Constitution."

3. The function of the State governments keep social problems from becoming national questions, on which the country may split.

4. This country has in the past demonstrated to the world its ability to overcome great crises and deal successfully with internal affairs. As examples of occasions we may cite the Revolution, our Indian troubles, the whisky rebellion, slavery and the Civil War, depressing commercial crises, political uprisings, etc., etc.

5. There is little or no danger from the Roman Catholic Church. It is highly improbable that an occasion will ever arise in which the Church will be opposed to the welfare of the State. Should such an occasion arise the Catholics, we may be sure, will be found on the side of the State.

6. There is no real danger in the social or industrial condition of the United States. The laboring classes have too many substantial advantages, and the broader educational advantage they now enjoy is fast making its influence felt.

7. Civil service reform is making rapid headway; so also is Ballot reform; reform in State affairs; machines are being broken up, and reformation is being prosecuted in municipal and social affairs.

8. The better class of citizens are awakening to their civic duties. There is a growing sentiment in favor of restricted emigration; scientific charity is becoming more common; arbitration and conciliation are being resorted to in settling labor and even international disputes; and there is a growing sense of responsibility on the part of the wealthier classes to the duties of their rank and response to the maxim *Noblesse oblige*.

I desire to avail myself of your opinion as to the study I should take up with the view of gaining a practical knowledge of grammar and English composition. I am a native of Holland, and came to this country when eighteen years old, know-

ing nothing whatever of the language. Since then I have acquired a fair speaking acquaintance with English, but wish to perfect myself in writing it with ease and accuracy. How should I go about this?

No doubt you will do well to take up some special educational course likely to be profitable as well as interesting to you. We fear, however, that you will do little without an instructor, to whom you can go occasionally to bring out to your comprehension the application of the rules of English grammar. We will nevertheless recommend you a good text-book, namely, Wells' "Elements of English Grammar" (price 60 cents), published by the Macmillan Co., Fifth Avenue, New York. With this we would also suggest your procuring Nichols' "Manual of English Composition" (price 60 cents), same publishers. But perhaps you would derive more benefit from the study of some handbook of errors in writing and speaking, of which there are several, which we will enumerate at the close of this.* With these works you would be put on your guard against solecisms, one of which we note in your letter when you say "I done," for "I did all kinds of work," etc. We note also that you misspell "privilege," "emigrated," and "religious;" but, on the whole, you write and express yourself well for a foreigner.

Rather than the study of these technical manuals, we have always seen that men who are in mature life and have no special aptitude perhaps for acquiring an education by set rules, do better by careful and observant reading of good models, and by noticing in an essay, printed speech, historical dissertation, or other article, how well-educated writers express themselves. Also, we have always recommended the student, where he can, to hear good public speakers, preachers, lecturers, and the like, and to take advantage, where one may, of good society. Get a book of representative oratory, with good selections, or take a volume of speeches, such as Daniel Webster's, Rufus Choate's, Edward Everett's, or Lord Macaulay's, and note their diction and the characteristics of their style.

* Strang's Exercises in English" (price 45 cents), D. C. Heath & Co., Boston and Chicago; Williams "Composition and Rhetoric for Practice" (price 90 cents), same publishers; Ellis' "Errors in English" (price 50 cents), Woolfall Co., Fifth Avenue, New York.

Kindly advise an admirer of SELF CULTURE what you think the prospects would be for two youths of studious habits, not afraid of work, who intend to start out for college with less than $100 in their pockets? Do you think that with economy and thrift they are likely to succeed, and with what work they might do in and around college, be able to meet all expenses? I ask information, as I am unfamiliar with student life in Universities.

If you could succeed in first winning or otherwise securing a scholarship in one or other of those Universities that are sufficiently well-endowed to afford bursaries for matriculants, or if you can take advantage of those institutions that charge no fees, it might be possible for two ardent and hard-working youths to get through the first year's work at college. The $100.00 would hardly do more, however, than pay board for the first session, leaving nothing for text-books and other necessary expenditures.

The holidays, of course, could be taken advantage of to supplement the fund at disposal, and provide for the following year's session; the difficulty would be in knowing what to turn to as a money-making occupation, and just where to go to find employment. It might chance that employment could be found attached to the University, some curatorship, librarianship, or even clerkship, for instance, with, possibly, work in assisting some professor to hunt up authorities and make quotations from a well-stocked library, or perhaps in acting as amanuensis or typewriter — and so one or both might gain the money necessary to go on with the studies. But this extra labor, we would suggest, should be confined to the holidays, since the work of study during the session should absorb all the energies, and even the leisure, at command. Perhaps, by writing the President, or head of one or other of the chief Universities, you might gain some information beyond what is here submitted; and to enable you to do so we would suggest your referring to the list of Universities in the New York "World" Almanac for the year — the section showing cost of living, tuition fees, where any are exacted, etc. (Page 285 *et seq.*)

Would you kindly inform an interested reader what languages are spoken in the South African Republic?

The official language of the Transvaal is Dutch, though it varies considerably from the literary form and is of a rather rude and corrupt sort. Among the Uitlanders (foreign immigrants), the chief tongue spoken is English; while in Swaziland, lying between the S. A. Republic and the Portuguese territories, on the eastern coast as well as on the frontiers generally, a dialect of Zulu is oftenest heard.

Will you kindly furnish me with some points on the affirmative side of the question, "Resolved: That co-education is a gain to the community?"

1. The system of co-education is preferable on economical grounds, since from the same expenditure of money greater efficiency will be secured. We do not attach the highest importance to this advantage, because, if not superior in other respects, economy alone should not settle the case. This point, nevertheless, cannot be overlooked, since the question has its practical side. With separate institutions for the sexes the cost of education will be nearly doubled, if like efficiency is to be maintained. Unless provision were made by public funds, the demands of all are not likely to receive attention. Private institutions, if established, would, as a rule, only answer the requirements of the wealthy. With co-education the country can secure, by the national institutions, facilities for enabling women to gain high attainments in every department of learning. With separate institutions she can expect only those of a very inferior character, with a correspondingly inferior intellectual status.

2. Co-education furnishes greater incentives to study. Students will thus have better opportunities for observing the development of the faculties of different minds. Both sexes are, in consequence, benefited by being taught in the same lecture room. Every good teacher knows how beneficial this diversity of intellectual acumen may be made during a recitation. Differences of mental cast powerfully assist the true educator. The result of separation causes each sex to form contracted views on many subjects, and to produce a one-sided opinion in many regions of thought.

3. The opponents of co-education contend that the system is injurious to the health of the girls. They say that the female sex cannot endure the same mental strain as the other, and that if girls are subjected to the same pressure as the boys the health of the former must give way. Those in favor of co-education hold the view that the superior physical power of man over woman is no more strongly marked than that of some men over other men. If a girl should not be placed in competition with a strong boy, a strong boy should not compete with a weak one, or a strong girl with a weak girl. Intellectual capacity and endurance are not found in proportion to strength of muscle, nor does strength of mind at all times correspond to strength of body. If it were so, the question of sex should be left out of consideration altogether.

4. Co-education will secure for females a training of more thorough and less superficial character. It does not follow that woman's course of study should be very different from man's, because her mental characteristics are different. We train boys with some regard for their strong and weak faculties. With girls a somewhat different plan has been fashionable. We find woman possessing a more strongly marked sensibility, acuteness, perception, and imagination, with a weaker nervous organization, and less power of reflection and concentration. To give her a training to intensify those weaknesses is a false principle, and tends to destroy her mental powers. Access to more severe studies would have a tendency to check the emotional and imaginative side of her nature. We are not to be understood as speaking disparagingly of such studies as music, drawing, and other kindred subjects, which is a necessary part of education, and should be taught efficiently. The true interests of woman demand, however, more than such attainments. In France, Germany, Austria, Sweden, and Russia, women have, in many instances, been admitted to University degrees. Queen's University and Trinity in Ireland, and Glasgow and Aberdeen in Scotland, have, like Cambridge in England, provided University examinations for women, though Cambridge the other day has seemed to take a retrograde step in refusing degrees to women. London University now admits women to all degrees, and Harvard, the centre of opposition to co-education in the United States, has been forced to advance with the wiser sentiment of the age. The excellence which has been attained by women at these different institutions proves that the sex should receive a thorough education as well as men. The University examinations prove that they have capacity as well as inclination for higher study.

5. Co-education is preferable on moral grounds. The moral influence of the sexes upon one another has been among the most powerful instruments for advancing modern civilization and refinement. True manliness is often wanting in boys not favored with the society of girls, and womanly dignity is absent in girls removed from the society of the other sex. The young man who is ungentlemanly is not popular with intelligent young ladies. The young woman who is given to trifling, or who is deficient in womanly refinement, is not esteemed by right-thinking young men. In a well-conducted school a self-restraint is cultivated which brings out the good qualities of both sexes. The "strong-minded" women who have brought the question of woman's rights into disrepute are not the result of co-education.

Kindly inform me if the literary partnerships continue, or, if not, please say when they were severed, between the French writers, Erckmann and Chatrian, and between the English novelists, Besant and Rice.

The literary collaboration has in both cases ceased, death in each instance terminating the partnership. M. Chatrian died in 1890, and Mr. James Rice in 1882. Since the latter's death, Mr. (now Sir Walter) Besant has continued actively at work and published many very successful novels, among the best of which, is the one entitled "All Sorts and Conditions of Men," which, it is said, inspired the founding in the east end of London of that great recreation hall and technical school, the People's Palace. Sir Walter Besant, besides his work in fiction, has been industrious in many other fields of authorship, as historian, antiquarian and literary critic, and his eminence as a man of letters earned for him in 1895 the honor of knighthood. The opening article in the present issue of SELF CULTURE is from Sir Walter's well-informed and entertaining pen. He is also the author of the interesting article on Froissart, the early French chronicler, in the Encyclopædia Britannica.

[CORRESPONDENCE]

Does the Mississippi flow up-hill?

The following letter has been received from a subscriber to SELF CULTURE commenting on the reply we made in our May issue to the above interrogation. We take pleasure in publishing the letter, not only on the score of instructiveness and the lucid presentation of facts which our correspondent so interestingly sets forth; but as showing the intelligence to which the magazine in large measure appeals and the degree of interest taken in the discussion of topics currently dealt with in our pages.

The answer we made in our May number was, of course, that which the facts justified, when, as was the case, we defined the word "level" in its customary surface or sea-level sense, and affirmed that the Mississippi does *not* flow up-hill. The other view — that taken by our correspondent — is nevertheless correct, in stating that the river, in its course to the equator, *does* (if we regard the earth's spheroidal form) run up-hill as do all the long rivers flowing southward in the northern and northward in the southern hemisphere, their mouths being farther from the earth's centre than are their sources. A complete discussion of the question involves mathematical principles too abstruse for reproduction in our columns. In the articles Gravitation, Mechanics, Hydromechanics, etc., in the E. B., will be found much that has a bearing on the subject.—ED. S. C.

I am very much interested in your answers to queries and trust you will pardon me for calling your attention to one which I do not think fully covers the point which must have been the cause of the question. The query referred to is this: "Pray, does the Mississippi river run up-hill? I have been told that its source is lower that its outlet."

One definition of "up," according to Webster, is "the opposite of down" or "a direction opposed to gravity." The corresponding definition of "down" is "in the direction of gravity, or towards the centre of the earth." Taking the meaning of the words "up" and "down" in this sense and considering the source and course of the Mississippi river it becomes apparent that the mouth of the river is farther from the centre of the earth than its source and consequently in a direction which may be described as "up" from its source.

The equatorial radius of the earth is about thirteen miles greater than the polar radius; hence a point on the equator is thirteen miles farther from the earth's centre than a point at either pole, and this distance from the earth's centre of any point on the earth's surface diminishes gradually as we pass from the equator to the poles.

The Mississippi river rises, approximately, in latitude 50°, flows almost directly towards the equator through a distance of about 30° or one third of the entire distance from the pole to the equator; hence its mouth is farther from the earth's centre by about 4¼ miles than its source, after deducting the one-third of a mile that its source is above sea level.

It is a fact determined by experiment that gravity exerts less force at the equator than at the poles, and if we consider this force alone as the cause of the fall of water, we would wonder why the waters of the ocean do not rush to the poles. There is another force to be considered, viz., the centrifugal force, caused by the earth's daily rotation, the same force which originally gave to the earth its ellipsoidal shape and which maintains the sea at its present level notwithstanding the force of gravity. The centrifugal force referred to, being exhausted in maintaining the sea level, it follows that the flow of water from any point above sea level is caused by gravity alone. Yours very truly,

E. T. BROWN, Chicago, Ill., May 22.

NEW INFORMATION NOTES.

The 132nd victim of the calamitous fire at the Charity Bazaar in Paris has just died. Some bodies are still lying at the Morgue in Paris for identification. The Minister of the Interior has distributed the awards to the persons who saved life on the occasion. The recipients include all classes of the population. The rewards consist of gold and silver medals and "mentions." One man only, the coachman Eugène Georges, who more than once entered the flames while a companion from the Rothschild stables opposite played the stable hose upon him and who thus saved several persons, has been made a Chevalier of the Legion of Honour. Altogether about 500 men and women have been rewarded.

The Russians in the Levant and in Syria are making vigorous efforts in the direction of a religious propaganda, and are subsidizing on an extensive scale Orthodox schools in centres such as Tripoli, Beirut, Damascus, and Haifa. Six new schools are to be established. One of the conditions of this liberality is that the Russian language should be thoroughly taught in the schools.

General Horace Porter on May 18 presented his credentials as American Ambassador to the President of France. He spoke of the bonds of sympathy between America and France resulting from a similar form of Government and common attachment to liberal institutions, as also from the alliance at the time of the birth of the American Republic and the blood shed in concert for the cause of liberty. All this, he said, had created imperishable ties of friendship. M. Faure, in reply, referred to the cordial relations, based on so many affinities, mutual sympathies, and historic recollections. With a common ideal of democratic and social progress, the two countries would always find a footing of friendly agreement.

Of late the subject of "Premature Burial" has been figuring somewhat extensively in the columns of newspapers. It is difficult to trace the origin of this anxiety over the probability or possibility of people being interred in a living state; and everyone will admit the truly horrible nature of the idea as it stands. A physician of note observes that he is inclined to regard this revival of the premature burial craze very much in the light of one of those passing excitements which are bound to crop up now and then in connection with many phases of our life and habits. Several of the accounts I have read boldly charge medical men with carelessness in certifying deaths—that is, with neglect in assuring themselves that the death has really occurred. This charge is a most unwarrantable one. If cases of trance were common events, no doubt there might be a frequent chance of some mishap in the way of premature burial; but such cases are few and far between, and, as a rule, the nature of such ailments is duly perceived and care taken that the simulation of death is not mistaken for the real cessation of vitality.

The subject of the "Craving for Salt" was discussed at a recent meeting of the Société de Biologie. M. Lapicque stated that sodium chloride was consumed as an article of necessity by nearly all races, and that most of the lower animals were fond of it, although there were exceptions to the rule. The herbivora betrayed a greater liking for salt than the carnivora, and in the same way agricultural populations, who were more or less vegetarians, were invariably large consumers of it. The tribes who ate no salt led a pastoral or nomadic existence, whose regimen was almost exclusively animal. This, said the writer, had led a scientist to formulate the theory that as vegetables contained principally potassium salts, these latter replaced the sodium salts in the economy, and the vegetarian instinctively craved for common salt in order to compensate for its loss through the kidneys. This theory was, however, weak, for it did not explain why certain peoples who had not access to sea salt replaced it by salts of potassium obtained by the incineration of plants.

The City Council of Louisville, Ky., has under consideration an ordinance prohibiting the presence of boys and girls under fifteen years of age on the street after 9 o'clock in the evening. It is believed the ordinance will be passed. The curfew movement is growing. Petitions are now being sent to the President from various parts of the country, requesting him to appoint the president of the boys' and girls' national home and employment association as an agent in connection with the national bureau of education to visit the larger cities and urge the adoption of curfew ordinances. Among the reasons given in the request for the appointment is that in cities where curfew regulations have been adopted there has been a decrease of 50 per cent. in the arrest of juvenile offenders and in the number of commitments of such offenders to reform schools since the adoption of the ordinance.

The Industrial Society of Rouen, France, offers gold medals for a portable pyrometer indicating with accuracy temperatures above 300 deg. C., for a new method of utilizing the solid products of the distillation of petroleum, for the best lamp for burning acetylene, for the application of an industrial process for the extraction of sulphur from iron and copper pyrites, and for a rapid and accurate method of determining cobalt and nickel in the New Caledonia ores. The essays must be forwarded to the president of the society before September 30. They must be written in French. The competition is open to members and non-members of the society.

A British Parliamentary paper has just been issued containing Professor D'Arcy Thompson's report on his mission to Behring Sea in 1896. His main object was to collect information as to the effectiveness of the regulations for sealing prescribed by the Paris award. He found that, while alarmist statements as to the approaching extinction of the seals were altogether exaggerated, measures to prevent their numbers from being further decreased are certainly still desirable. He says:

A birth-rate which we estimate at 143,000 per annum is not great in comparison with the drain upon the stock. From one cause or another, a loss of over 20,000 is experienced among the pups ere they emigrate to sea; and though the dangers they there encounter are unknown to

us, we may take it for certain that the risks they run are great and the loss they endure considerable. When to the measured loss in infancy and to the unmeasured loss in youth and age we add the toll taken on the islands and the toll taken in the sea, it is not difficult to believe that the margin of safety is a narrow one, if it be not already in some measure overstepped. We may hope for a perpetuation of the present numbers; we cannot count upon an increase. A recognition of mutual interests and a regard for the common advantage should suggest measures of prudence which shall keep the pursuit and slaughter of the animal within due and definite bounds.

Mr. Mulhall, the eminent statistician, has recently been praising New England for the progress as well as the extent of its manufacturing interests. He calls attention to the fact that the value of the output from the factories has quintupled since 1850. It is pointed out that, relatively to population, no European country can vie with New England in respect of manufactures. The value of the annual output represents in her case $319 per inhabitant; in the case of Great Britain, $115; in the case of Belgium, $88, and in that of France, $74. The rate, moreover, at which manufactures have advanced has been incomparably greater in New England than in Great Britain. The annual value of manufactures per inhabitant in Great Britain was $111 in 1850, and but $115 in 1890; during the same period it rose in New England from $104 to $319. In other words, British manufactures during the last forty years have done little more than keep pace with population, while those of New England show a ratio per inhabitant three times greater than that of 1850. Bootmaking is carried on in New England to a degree that eclipses all European nations.

Japanese competition in match manufacture is beginning to be seriously felt in Europe. After supplying the home market, the Japanese send 2,500,000,000 boxes to the rest of the world, mostly, however, to Asia. This has destroyed the European match trade in India, China and Hong Kong, but so far it has not affected the trade in America to any extent.

Why tempering hardens steel has recently been discussed in The Industrial World. It appears, says our contemporary, that after some five years' research, the metallurgical department of the Sheffield Technical School has solved a peculiar problem to students — namely: why a piece of red-hot tool steel becomes flint hard when suddenly quenched in water. The result of the researches in question showed, almost beyond a doubt, that the well-nigh diamond hardness of quenched steel is due to the presence of a remarkable subcarbide of iron, and that the action of tempering is due to the fact that far below red heat this compound decomposes and dilutes the mass with soft iron — the permanent magnetism of steel depending on the amount present of this compound. It was formerly supposed to be a satisfactory explanation of this phenomenon that the shock drove the molecules of the steel into closer contact, and hence the hardness — a theory invalidated by the fact that, as disclosed, the volume of the hardened steel was greater than that of the unhardened material.

The rapid rise of the land about Hudson Bay is said to be the most remarkable gradual upheaval of an extensive region ever known, Driftwood-covered beaches are now twenty to sixty or seventy feet above the water, new islands have appeared, and many channels and all the old harbors have become too shallow for ships. At the present rate this shallow bay will disappear in a few centuries, adding a vast area of dry land or salt marsh to British territory in America.

The plan to make Minneapolis the head of navigation in the Mississippi, as it was forty years ago when the river steamers came up to the old Falls of St. Anthony, is about to be realized. Within a month advertisments for bids for the construction of one of the two combined locks and dams between Minneapolis and St. Paul will appear in the public press and within two months the work will be under way. The river is now navigable to St. Paul for all river steamers but between the twin cities various rapids have made the trip dangerous for other than the smallest boats.

At last Nikolá Tesla has reached a point in his investigation of the possibility of telegraphing without wires to make a postive announcement of his achievements. Mr. Tesla declares that he has produced electrical devices with which he can actually send and receive messages by a system which can be so applied as to make it possible for an operator in New York to communicate with ease and certainty with the people of any part of the earth, and, perhaps, even with those of the stars, if any of these are inhabited. "The machines which I have completed," Mr. Tesla says, "will carry messages through the earth for a distance of twenty miles or so. I have sent and received signals with them, and I feel confident that I am not mistaken in saying that the problem upon which I have spent many days and nights is solved. Of course it is possible that I am mistaken. I have made mistakes before, but not many. I shall at once make machines which I expect will enable me to telegraph to any part of the earth as readily as I can within a limited distance by means of the ones I have."

Lord Kelvin, in an address upon the age of the earth as an abode fitted for life, has summed up the evidence into what must be accepted as the latest dictum of science. He affirms that geologists and biologists no longer consider the question of absolute dates outside their province. The old idea was of a solid earth nearly 20,000,000,000 years old. Modern science makes an immense reduction in this estimate. He is able to declare with confidence that the earth solidified between 20,000,000 and 30,000,000 years ago. The latest estimate of the time required for the formation of all strata since the beginning of the Cambrian rocks is 17,000,000 years. Lord Kelvin asserts that the earth cannot have been habitable more than 30,000,000 years.

The method of cremating or incinerating the body after death is, it would seem, much misunderstood by the public. A report of the United States Cremation Company says that "Cremation is erroneously supposed to be a burning of the body. It is not! No flame whatever touches the flesh or bones from the beginning to the end of the process. It is properly and strictly incineration, or reduction

of the human frame to ashes and absorption of all the gaseous elements, carried on inside a fire-clay retort, three feet in diameter and seven in length. An eye-witness describes the process as follows: "As the door of the retort is opened the inrushing air cools it from white to red heat, and the whole interior is filled with a beautiful rosy light that is fascinating to the eye. The body, decently clad as for burial, is laid in a crib, which is covered with a clean white sheet soaked in alum. The crib is then put into the retort. The sheet retains its original position and conceals the form until nothing but the bones are left, and these gently crumble into dust as under the mystic touch of an invisible agent. There is nothing repulsive or painful about it; nothing which need shock the most refined tastes, nor offend the most delicate sensibilities." This ancient as well as modern method of disposing of the dead is treated of in the article on Cremation, in the Encyclopædia Britannica, Vol. VI., page 567.

Admiral Makarof of the Russian navy has invented a species of ice-plough capable of breaking through ice from 12 to even 20 inches thick. The experiments have proved so satisfactory that the government has given orders for the immediate construction of two vessels of 10,000 horse-power each, armed with these ploughs, by means of which it is expected to keep not only the River Neva, but also the various Muscovite ports, open to navigation throughout the winter. The majority of Russia's ports and naval arsenals are ice-bound during more than four months of the year.

The longest bridge in the world, says the Scientific American, is that over the Tay, in Scotland, which is 3,200 metres = 9,696 feet long; and the next longest is also in Great Britain, being that over the Firth of Forth, 2,394 metres = 5,552 feet in length. The following table gives, in metres and in feet, the lengths of the principal bridges in various countries:

	Metres.	Feet.
Tay, Great Britain	3,200	9,696
Forth, Great Britain	2,394	5,552
Moerdyck, Holland	1,470	4,820
Volga, Russia	1,438	4,715
Weichsel, Germany	1,325	4,346
Thoen, Germany	1,272	4,172
Grandenz (Elbe) Germany	1,092	3,580
Brooklyn, United States	488	1,601

The greatest single span of the Forth Bridge is 521 metres = 1,725 feet; of the Elbe Bridge, 420 metres = 1,378 feet; of the East River Bridge, 488 metres = 1,601 feet between the towers; total length, 6,537 feet.

The Buffalo street car companies, says The Industrial World, are now receiving 5,000 horse-power daily of electricity from Niagara Falls, and it is said to work effectively, at a cost of $36 per horse-power a year. The company at Niagara Falls is doubling its plant, and by the 1st of October next will be ready to supply 30,000 horse-power in addition to its present capacity. The wires are already being strung for the purpose of transmitting this power to Buffalo for commercial purposes, and the company is already making contracts to supply manufactories, printing offices, hotels and other patrons with both power and light. While the price is not yet permanently fixed, it is expected that the cost will be $50 per horse-power a year in large quantities, and $60 in small quantities. This is claimed to be about two-thirds of the cost of ordinary steam with coal fuel, and only about one-half as much as it costs to generate electricity from an ordinary plant.

An authority (Prof. A. R. Elliot) has recently been highly commending the uses of fruit at table. Among these uses he enumerates the following: 1. To furnish variety to the diet. 2. To relieve thirst and introduce water into the system. 3. To furnish nutriment. 4. To supply organic salts essential to proper nutrition. 5. To stimulate the kidneys, increase the flow of urine and lower its acidity. 6. To act as laxatives. 7. To stimulate and improve appetite and digestion. 8. To act as anti-scorbutics. Concerning the mode of preparation, ripe fruits as a rule do not need to be cooked, and are much more palatable and equally nutritious in the uncooked state. The proper time to eat fruits is either at the beginning of the meal or between meals, when they aid digestion and exert the greater laxative effect. Taken at the completion of a meal, they dilute the gastric juice and tend to embarrass digestion.

The population of the city of New York, according to the police census of 1895, is 1,851,060. The population of Brooklyn, according to estimates based upon the State census of 1892, is 1,142,728. The population of the future borough of Queens, as estimated in 1896, is 46,502 for Long Island City, 22,500 for Flushing, 24,500 for Jamaica, 25,000 for Newtown, and 8,200 for part of the town of Hempstead, or about 127,000 in all. The population of Staten Island was estimated at 65,000 in 1896. The aggregate population of Greater New York is therefore substantially 3,165,000.

The crop report of the Department of Agriculture says: "The estimates by States and Territories of the area, product and value of the principal cereal crops of the United States for 1896, made by the statistician of the Department of Agriculture, are as follows: Corn area, 8,627,000; product, 2,283,875,000; value, $491,007,000; yield per acre, 28·2 bushels; farm price per bushel, 21·5c. Winter wheat area, 22,794,000; product, 267,934,000; yield per acre, 11·8 bushels. Spring wheat area, 11,825,000; product, 159,750,000; yield per acre, 13·5 bushels. Total wheat area, 34,619,000; product, 437,684,000; value, $310,603,000; yield per acre, 12·4 bushels; farm price per bushel, 72·6c. Oats area, 27,566,000; product, 707,346,000; value, $132,485,000; yield per acre, 25·7 bushels; farm price per bushel, 18·7c. Rye area, 1,831,000; product, 24,369,000; value, $9,961,000; yield per acre, 13·3 bushels; farm price per bushel, 40·9c. Barley area, 2,951,000; product, 69,695,000; value, $22,491,000; yield per acre, 23·6 bushels; farm price per bushel 32·3c. Buckwheat area, 755,000; product, 14,090,000; value, $5,522,000; yield per acre, 18·7 bushels; farm price per bushel, 39·2c. Potatoes, area, 2,767,000; product, 252,235,000; value, $72,182,000; yield per acre, 91·1 bushels; farm price per bushel, 28·6c. Hay area, 43,260,000; product, 59,282,000 tons; value, $388,146,000; yield per acre, 1·37 tons; farm price, $6.55 per ton. Tobacco area, 595,000 acres; product, 403,004,000 pounds; value, $24,258,000; yield per acre, 678 pounds; farm price, 6c. per pound."

THE WORLD OF THOUGHT:

ABOUT BOOKS AND THEIR AUTHORS

Mark Twain's Reverses of Fortune

The myriad readers of the type of American humor associated with the pen-name of Mark Twain — and we hardly know the writer by any other designation — will learn with unfeigned regret that this prince of humorists has, through business misfortune and domestic calamity, of late fallen upon evil days. Recently, death robbed him of a favorite daughter, and this following upon the wreck of his fortune, through the failure of a business house in New York which he financially assisted, has darkened his life with a great sorrow. When business troubles, for which, we believe, he was himself in no way responsible, came upon him, he bravely set forth on a tour of the world to pick up material for a new book by which he hoped, in some measure, to retrieve his fortunes. The tour completed, he is now in London, hard at work in the preparation of "The Surviving Innocent Abroad"— but meantime the once joyous pen, by reason of the mental strain on the writer, jibes and halts, and the book, we believe, does not get on without more or less forced effort.

The pathos of the situation, as was the case with Sir Walter Scott after the failure of the Ballantynes, is increased by the fact that the necessity for the effort on Mark Twain's part is to relieve himself of embarrassing obligations to his creditors in this country, and by the further fact that work has now to be done under the stress of broken health and advancing age. So sore are the straits in which the great humorist finds himself that, though he has himself, with natural delicacy, withheld from the world any knowledge of his affairs, he has permitted himself to be interviewed in regard to them, and suffered a public appeal to be made on his behalf, through the instrumentality of the New York "Herald." That journal, in its issue of the 13th ult., makes public announcement of the opening of a subscription at its European and New York offices, and it generously heads the list with the donation of its proprietor to the extent of one thousand dollars.

It is now many years since the author of "Tom Sawyer" and "Huckleberry Finn" began his serious work in life, in the printing office of the Hannibal Courier, or, later in pursuing piloting on the Mississippi for a livelihood. Since then he has done a good deal of "roughing it," seeing and portraying life in many and real phases, and, on lecture or on world-exploring tours, been at once a tramp at home and "a tramp abroad." What wealth of experience he has gathered in his vagabond life, and how inimitably and with such genuine and infectious humor he has set it forth in his books, we all know. But we can little know the toil undergone or the many vicissitudes in his career, still less the ache of mind and heart in pursuing the craft of letters — so real at all times is his mirth and hearty and jocund his mood. And yet to do the work he has done, considering the disadvantages from humble beginnings he has ever been at, must have cost effort of no slight kind; while to draw the characters he has limned and set them with such keen insight and side-splitting humor before the reader as studies of the crude civilization amid which his life has for the most part been spent, must have heavily taxed his powers of imagination and made large drafts upon his ingenious capacity for portraying the droll side of life. If his humor, at times, is a trifle coarse, and in one notable instance irreverent, we are compensated by its quaintness and drawn to him by his large humanity and close kinship with the people. Nor are his own true-heartedness, honest manliness, and hatred of shams and cant, the least real of the causes of our liking and attachment for the writer. These, no less than his pervasive and ever-bubbling humor, are the abiding charms of the man, and must bring him, more especially at such a time as this, into the inner recesses and closest folds of our hearts.

The English and French Fur Traders

Few chapters in the unwritten history of the continent are more full of romance than those relating to the fur trade, and especially to the race rivalries of the two great companies that a century ago held sway in the arctic solitudes of North America. Browsing in an ample library the other day, we chanced to come across a French-Canadian work — "Les Bourgeois de la Compagnie du Nord-Ouest," par M. Masson (Montreal and Toronto), our interest was revived in the volume — for we had previously become acquainted with it — since we found it full of entertaining matter in connection with the operations of the Montreal Fur Company, composed of Scotch and French Canadians, of which Washington Irving has left us some account in his "Astoria." From the work we also gleaned a good deal about the great English company of the "Hudson Bays," the vast area of its operations, and of some of its hardy

factors and traders who distinguished themselves by their explorations in the region long known to geographers as Prince Rupert's Land. Amid the vicissitudes of nations this chartered company held the territory for two hundred years, until it passed to the British crown and subsequently to the Canadian Dominion. Till the close of that period colonization knocked in vain at every gateway of the region. For a hundred years the Hudson Bay Company did little to open the country, contenting itself with establishing a few trading-posts on James Bay, to which the Indians of the Athabasca and Saskatchewan region resorted for trade. Meanwhile the great plains of the Canadian Northwest had been explored by way of Ottawa and Lake Superior, first by the adventurous French, and, after the conquest of Quebec, by the equally adventurous Scotch of Montreal and Quebec.

The result of this probing of the Northern continent by the waterways of the St. Lawrence system was the speedy diversion of the peltry trade from the routes it had been wont to follow, and the awakening of the Hudson Bay Company to the active rivalry of Montreal. In 1784, the latter organized themselves into a trading corporation, known as the North-West Company, the history of which has been given by M. Masson. The story told in his pages comprises the dramatic incidents in the career of the company, from its organization (in 1784) to its amalgamation with the Hudson Bays in 1821. It is a story of almost continuous strife, peril and bloodshed. The ill-starred relations of Lord Selkirk and his Red River colony with the Hudson Bays, and the long and bitter contest between the settlers and the wintering partners and employees of the North-West Company, are the chief incidents of the story. In narrating them, the author shows a manifest animus against the Hudson Bay Company and the philanthropic nobleman who sought to found a colony on the Red River, now the Canadian province of Manitoba.

So partisan is M. Masson in dealing with this portion of his work that the reader will have to seek elsewhere for the materials of a soberer judgment. The chapters dealing with exploration in the region we take to be more trustworthy, and they are certainly very entertaining. Pleasant also is the account given us of the magnates of the Montreal Company, and of the lordly hospitality in which they indulged at the annual gatherings of the partners at Fort William. Very welcome, to the wintering partners at least, must have been those times of cheer, for desolate indeed was the life of the early fur-traders in posts remote not only from civilization but from contact with their kind. Interesting matter will be found in the latter half of the book, which deals with Alexander Mackenzie's expeditions to the Arctic and the Pacific oceans, with Simon Fraser's voyage from the Rocky Mountains to the coast, with an exploratory tour with Captain (afterwards Sir John) Franklin, and with various trading ventures among the Missouri Indians. The author has derived the materials for these interesting narratives from the hitherto unpublished journals of servants of the fur companies. The work, as a whole, is a valuable addition to the literature of the era of the fur trade, especially in the region long known as New France.

* * *

An inspiring, optimistic volume reaches us, under the title of "A Man's Value to Society," from the press of Fleming H. Revell Co., New York and Chicago. Its author is Dr. Newell Dwight Hillis, a popular clergyman of Chicago, who is well fitted to address young men on such studies as self-culture and character, since he is not only a man of wide reading and large experience, but is alive in thought and feeling, and knows thoroughly how to reach and impress the minds of his readers. His work is full of wise thought and counsel, brightly presented, and with no exaggeration or suspicion of cant. Here are some of his subjects: *The Revelators of Character*, *Aspirations and Ideals*, *The Physical Basis of Character*, *The Mind and the Duty of Right Thinking*, *The Science of Living with Men*, *The Uses of Books and Reading*, *Making the Most of One's Self*.

As an example of the author's style we extract the following on "the misfits of life," from the chapter on The Elements of Worth in the Individual. " The successful man grasps the handle of his being. He moves in the line of least resistance. That one accomplishes most, whose heart sings while his hand works. Like animals, men have varied uses. The lark sings, the ox bears burdens, the horse is for strength and speed. But men who are wise towards beasts are often foolish towards themselves. . . The school is to help the boy unpack what intellectual tools he has; education does not change, but puts temper into these tools. No man can alter his temperament, though, trying to, he can break his heart. How pathetic the wrecks of men who have chosen the wrong occupation. The driver bathes the raw shoulder of a horse whose collar does not fit; but when men make their misfits, and the heart is sore, society does not soothe, but with whips it scourges the man to his fruitless task. John Stuart Mill placed the industrial mismatings among the heavier losses of society." G. M. A.

EDUCATIONAL STUDIES FOR YOUTH:

ON ENGLISH COMPOSITION

FOR some years our educational systems have happily been shaped in accordance with the conviction that our mother tongue ought to have the first claim upon the teacher in the training of youth. Unfortunately, in the teaching of our mother tongue, educational effort has, in a great measure, been dissipated in grammatical analysis and other purely mechanical details, while the step beyond, facility in the writing of good English, has been little taught or acquired. Years have been spent by the pupil in putting up the scaffolding, but the building itself has rarely been got under way. We are far, of course, from implying that any fair measure of success in the writing of English can, as a rule, be attained without much drill in syntax. Yet it is well known that many journalists and literary men acquire even great skill in this art who are destitute of any technical knowledge of the language. In their case a correct ear, familiarity with good literary models, and contact with people who habitually speak good English, supply the place of text-books, and even of unimpeachable school drill in grammar. It may be said, indeed, that it has been their good fortune to be spared the dulling effects of much grammatical study; and that relief from this has given them the ready power of writing clearly their own thoughts and of quickly apprehending the thoughts of others. However this may be, there can be no question that the ability to write clear and correct English is in these days the educational need of our youth, with such a knowledge of the language as will discipline the mind rather than burden the memory. With the writing of good English will come the power of appreciating its noble literature, and of stimulating faculties that too often lie dormant or run to waste.

How the writing of English can best be acquired is a question not easily answered. Text-books and intelligent training will do something; but practice and the study of good models, will, admittedly, do more. The first step (we are here specially addressing the teacher) is to train the pupil to think. If at first, which is likely to be the case, the pupil cannot use his reflective powers so as to provide himself with material for a theme in Composition, he may, with advantage, be referred to some pregnant passage occurring in the works of a good writer. He should be asked to gather the substance of the writer's argument in the passage, and to translate it into his own words. The paraphrase he may then commit to paper. Varied practice of this sort, with the corrections and counsel of a good teacher, will do more to impart facility in writing than any number of rules, or a lengthy course of grammatical exposition, however good. In English Composition, as in other branches of education, much more may be attained by oral than by text-book teaching. There are a few hints, however, that may be useful to the pupil, which we here venture to set forth, with the remark that, in this as in other studies, little can be done without the pupil's exercise of his own mental powers, or without taste in the selection and assiduity, as we have said, in the reading of good literary models.

Before beginning a practical course of English Composition, the teacher will do well to impress upon the pupil's mind the following requisites to success in the writing of English, mastery of which, in his exercises and practice, the learner should endeavor to gain: (1) Familiarity with the subject to be written about; (2) Some notion of method in the arrangement of topics, and natural sequence of ideas in treating of them; (3) A fair English vocabulary (the simpler the better); (4) An accurate knowledge of the meanings of words and phrases; (5) Some degree of taste and sense of propriety in the language used; (6) Such an acquaintance with the rules of grammar as will keep one from violating syntax; and (7) "A ready perception of the beauties of language and of those things that tend to make it most effective for its purpose."

With these general ideas impressed upon the mind of the pupil, and with preliminary practice in sentence-building, including exercises in variations of its structure, phraseology, and sequence,

he may go on to the composition of the paragraph, and to the analysis of its properties — unity, consecutiveness, and variety. From these he may proceed to exercises on theme-writing, and to lessons on the qualities of style, particularly in its essentials of perspicuity and strength. In the exercises on the analysis of style, the utmost care should be taken to make criticism on the mere mechanism of the language subordinate to the all-important consideration of the thought and aim of the writer, which form the essence of every literary work. While a student of literature, it should not be forgotten that the pupil is also a student of the world; that he is being prepared to enter upon a life of thought and action for himself; and that the pedantry which makes so much of school work in the grammatical construction of the language is a poor substitute, as a means of training, for those impressive lessons, both of principle and sentiment, which happily abound in English literature, and are its most distinguished characteristic. Nor should it be forgotten that over-attention to the minutiæ of criticism prevents the pupil from forming just or adequate conceptions of an author's work, and, in the case of a masterpiece of literature, limits his vision of its large and general aspects.

In proceeding to theme-writing, the teacher's care, after he has seen to the grammatical purity of the pupil's compositions, should be chiefly directed to the supervision of their rhetorical qualities. A heavy hand will here be needed, as the tendency of imaginative youth is to run riot among the flowers of the language. The first requisites he should exact are Simplicity and Clearness; after that may come Strength. Perhaps no better rules can be given, as directions to the pupil in attaining these requisites, than the old and simple ones of Lindley Murray, which we fear are, in these modern days, not so familiar as they ought to be, and hence may here be quoted:

1. "Avoid," says Lindley Murray, "all such words and phrases as are not adapted to the ideas you mean to communicate, or which are less significant than others of those ideas.

2. During the course of the sentence the scene should be changed as little as possible, *i. e.* [do not let the mind be hurried by sudden transitions from person to person, or from subject to subject].

3. Never crowd into one sentence things which have so little connection that they could bear to be divided into two or three sentences; and keep clear of all unnecessary parentheses.

4. For promoting the strength of a sentence, prune it of all redundant words and members: much force is added to a sentence by brevity.

5. Attend particularly to the use of copulatives, relatives, and all the particles employed for transition and connection.

6. Dispose of the capital word, or words, so that they may make the greatest impression; and, when the subject admits of it, attend to the climax of a sentence.

7. A weaker assertion or proposition should never come after a stronger; when a sentence consists of two members, the longer should generally be the concluding one.

8. Avoid concluding a sentence with an adverb, a preposition, or any inconsiderable word; and be careful not to misplace an adverb.

[There is no word in the English language, says a modern authority in grammar, which is so frequently misplaced as *only*. Hence, it is important to lay down the rule with regard to it: Only limits the word or words immediately following it; Alone, limits the word or words immediately preceding it.]

9. In the members of a sentence, where two things are compared or contrasted with one another, whether either a resemblance or an opposition is intended to be expressed, some resemblance in the language and construction should be preserved. When the things themselves correspond to each other, we naturally expect to find a similar correspondence in the words.

10. Attend to the harmony and easy flow of the words and members.

11. The same word should not be repeated too often in the same sentence or paragraph, though the sense should not be sacrificed to avoid repetition.

12. Long and short sentences should be agreeably interspersed in a paragraph; the ear tires of a number of sentences of similar construction following each other with monotonous regularity."

In setting themes for composition the teacher will do well at first to avoid subjects that make unusual demands upon the pupil's powers of reflection, unless they are familiar to him. Narrative composition, on some incident or story; on some familiar object or feature of local interest; or on some character in, or event of, history, will be found much more suitable. At first a skeleton, or scheme of arrangement in the topics, should be supplied, such as the following:

In Biography: 1, Place and circumstances of birth; 2, Youth and education; 3, Occupation of life, and circumstances determining that occupation; 4, Progress in life-work; 5, Death and attendant circumstances; and 6, Reflections on the character, and lessons drawn from the life, passed under review.

In History: 1, The event itself; 2, Cause of occasion of it; 3, The time and place; 4, The manner of its happening and attendant circumstances; and 5, The result: what it produced or effected.

Before taking up themes for composition, a few hints or counsels may perhaps be acceptable by young students who desire to escape the pitfalls on the road to attainment in good writing. The rules laid down by the grammarians as aids to the accurate writing of the language are frequently transgressed, even by good writers, sometimes from ignorance and sometimes from carelessness. A common defect arises from false concords, that is, from using the wrong gender, number, case or tense, and from the lack in most grammars of illustrative examples of common errors. To the foregoing hints we shall add such instances of improprieties in the speaking or writing of English as are commonly to be heard or met with, in the hope that the young student of the language who dips into this department may profit thereby. The hints appended are taken partly from Prof. Nichol's "Primer of English Composition" (London: Macmillan & Co.; New York: The American Book Co. Price 35 cents).

G.M.A.

FALSE CONCORDS

I. Mistakes in GENDER are almost confined to confusions in the use of figurative language; *e. g.*, "The cities *who* contended for Homer" is an over-violent personification. Observe that "*which*" is no longer applied, as in Shakespeare's time, to persons, except in asking a question — "Which of the brothers?" or in reference to an alternative, "I know not which of the two." "*That*," on the other hand, may be used of both persons and things —

> "We were the first *that* ever burst
> Into that silent sea."

II. WRONG CASES occur most frequently in the use of the pronouns, especially when they are separated, by some intervening clause, from the nouns to which they refer; *e. g.*—

"We shall speedily become as poor as *them* [*they*]."

"*He* that can doubt whether he be anything I speak not to."

"*Who* of all the men in the world do you think I saw?"

"*Whom* do men say that I am?"

These and similar errors may be detected by supplying the omitted words, or by changing the construction.

Observe that "I esteem you more than *they*" or "more than *them*" is equally correct in grammar. But the two phrases have different meanings; the first being equivalent to "I esteem you more than they do," the second being equivalent to "I esteem you more than I esteem them."

Beware of using such expressions as "It is *me*," "It is *him*," "Between you and *I*," "It cannot be *me* you mean" contracted from "It cannot be I whom you mean."

III. WRONG NUMBERS are frequently met with when there are intervening or qualifying clauses and the nearest noun or group of nouns is mistaken for the nominative; *e. g.*—

"The quality of the apples *were* good."

"A plurality of subjects *require* a plural verb [should be *requires*]."

"The dropping of cumbrous words *are* [*is*] a real gain."

"He was fonder of nothing than wit and raillery, but he is far from being happy in *it* [*them*]."

The collective force of "and" or the disjunctive force of "or" is forgotten in the following:—

"Both minister and magistrate *is* compelled to choose between his duty and his profession."

"A feeble, harsh or obscure style *are* [*is*] always *faults* [*a fault*]."

"When the helplessness of childhood or the frailty of women *make* an appeal."

As a rule the verb agrees with the subject, but it may agree with the predicate when the latter comes first in the sentence, as —

"The reward of the sovereign *is* the love and respect of his people."

Many COLLECTIVE NOUNS — as People, Clique, Ministry, Meeting, League — may be followed indifferently by either a singular or a plural verb. But it is absurd to vary the number of the verbs or pronouns agreeing with the same noun in the same sentence; *e. g.*—

"No *people* ever *was* more rudely assailed by the sword of conquest than *those* of this country; none had *its* chains, to appearance, more firmly rivetted round *their* necks."

"The mob *is* cruel and *they are* [*it is*] ignorant."

The distributives EACH, EVERY, EITHER, NEITHER are improperly followed by the plural of the verb; *e. g.*—

"I am not certain that *either* of us *were* [*was*] there."

"How far *each* of the three epic poets *have* distinguished themselves."

"*Neither bear* any sign of case at all."

"Let *everyone* please *themselves*."

AS WELL AS, and NONE = No one, take the singular. It is wrong to say, "Homer as well as Virgil *were* studied;" "None *have* [*has*] come."

AND NOT, after a singular, takes a singular verb; *e. g.*—"My poverty, and not my will, *consents*."

MANY A, properly takes the singular; *e. g.*—

"Full many a flower *is* born to blush unseen."

IV. WRONG MOOD AND TENSE. The most frequent errors in English under this head should be avoided.

Observe the SEQUENCE OF TENSES.

(*a*) Generally a Past tense goes with a Past tense; a Present with a Present or a Future tense. The following false sequences will illustrate the rule:

"No writer *would* write a book unless he *thinks* it *will* be read."

This must be either "no writer *will* unless he *thinks* it *will*," etc., or, "no writer *would* unless he *thought* it *would*," etc.

"Before six months were past the paper *was known* in almost every village; while at the extremities of the country it *circulates* every morning."

The second statement should be made in a separate sentence.

PROPRIETY IN THE USE OF WORDS

Perfectly good English words may be misused by being employed so as to convey either no sense or a wrong sense. They are wrong words because they are in the wrong places. In good writing every word and phrase must be made to bear the sense properly belonging to it, that is, the sense which etymology or established usage has assigned. When this rule is violated an impropriety occurs. The main sources of impropriety in English are:—

1. NEGLECT OF THE PROPER SEQUENCE OF PARTICLES. Nothing but study of the best writers and practice in composition will enable us to decide what are the prepositions and conjunctions that ought to go with certain verbs. The following illustrate some common blunders:—

"It was characterized *with* eloquence," read "by."

"A testimonial *of* the merits of his grammar," read "to."

"It was an example of the love *to form* comparisons," read "of forming."

"Repetition is always to be preferred *before* obscurity," read "to."

"He made an effort *for meeting* them," read "to meet."

"They have no *other* object *but* to come," read "other than," or omit "other."

"Some anomalies have never been *excepted against* by any writer," read "taken exception to."

2. WANT OF DISCRIMINATION BETWEEN SYNONYMS. The number of real synonyms, or words having precisely the same signification, is in any language very limited. In general the terms so called merely approximate without coinciding: there are shades of difference between them. The exactitude of an author's style is greatly determined by his appreciation of those differences; by his making use of the precise word which in the circumstances is the fittest, *i. e.*, which will best express his thought.

Gross instances of impropriety, as "*Herculanean* labors," for "Herculean," "The *Anatomy* of Bulgaria," for "Autonomy," "That subject should be *tattooed*," for "tabooed," result from confusion of sound, or from confusion of quite different senses, as "Harvey *invented* the circulation of the blood, Galileo *discovered* the telescope." These and the like are too glaring to be frequent; but there are few writers who do not occasionally err in their selection from pairs of terms more closely related. Such are: Abstain and Forbear; Consent and Comply; Hereafter and Henceforth; Apparent and Manifest; Weary and Fatigued; Difficulty and Obstacle; Avow and Confess; Construe and Construct, etc.

Warnings like the following may be indefinitely multiplied from the works of even justly celebrated authors:—

"Some pains were thrown away in attempting to *retrieve* the names of those to whom he alludes," read "recall."

"I *doubt* that his partiality has carried him too far," read "fear."

"Warburton's *infidelity* was greatly suspected," read "fidelity," or "he was suspected of infidelity."

"In this passage he might find matter even to prompt *risibility*," read "laughter."

THE SCIENCE OF FAMILIAR THINGS:

III.—ACTION AND REACTION

To every action there is always an equal and contrary reaction; or the mutual actions of any two bodies are always equal and oppositely directed. This is Newton's Third Law of Motion.

Two persons, A and B, are pulling at a rope in opposite directions. Both exert their full strength, but they are equally strong and neither is moved. In which direction is the force acting? Is A pulling B or is B pulling A? Clearly they are pulling, or trying to pull, each other. There are two forces at work, for A is exerting force and so is B; but the forces being equal and contrary, the action of one is neutralized by that of the other so that no motion results. Now, suppose that A attaches the rope to a post and then pulls at it with all his strength, as before. He neither moves the post nor does the post move him. So far as he is concerned it is a matter of indifference whether the rope is attached to a post or is held by the equally immovable B. How about the forces now? The case is essentially as before, the only difference being that one of the forces is now exerted by a post instead of by a human being. In a case like this, however, it is convenient to consider that there is but one *active* force and to speak of the other as a *resisting* force. The action of the resisting force is called *reaction*. The meaning of Newton's law should be rendered obvious by this illustration.

To guard against any possible lack of clearness, we will take another illustration. We are in a boat, and at a distance from us of a dozen yards or so is a second boat of precisely the same size and equally laden. The boats are connected by a rope. We wish to draw the second boat to us, and with this intention we pull on the rope. The result is that both boats are moved. When they come together neither is in its original place, but they meet at a point half way between these places. Equal forces have been applied to the two boats, and if we choose to regard the force which we have exerted as the acting force then the other may be considered as a reacting force. That there is a real force acting from the second boat will be clear if we will reflect that the same result would have followed if the rope, instead of being attached to some part of the boat, had been held by a man in it, who had pulled at our boat while we pulled at his. Now take an oar and push the second boat away. Again both boats are moved, for it matters not whether the forces are pulling (attracting) or pushing (repelling) forces; the law of action and reaction holds good in either case.

Next suppose that we stand on the deck of a large vessel and similarly pull at a small boat. The result is essentially the same. The vessel on which we stand is moved as well as the boat, though not so far, for the vessel being a more massive body than the boat, requires a correspondingly great force to move it to the same distance in the same time. Indeed, the motion of the vessel in this case is quite imperceptible; yet it has certainly been moved a trifle, for it has been pulled as well as the boat and with the same force.

In these cases we have dealt with muscular force; but the law is applicable to forces of every sort. Suppose that instead of two boats, floating on the water, there are two bodies of equal masses, floating in the vicinity of each other somewhere in inter-stellar space. The mysterious force of gravity will act between them; they will attract each other, and will move towards each other, and being equally attracted they will move with equal velocities. They will come together at a point midway between their original positions, just as did our two boats. It would be hard to say in this case which of the two forces is active and which is reactive. In fact there is no real difference between action and reaction, the use of two terms to designate forces thus related to each other being merely a matter of convenience.

In what precedes we have been gradually working up to a clear perception of the true state of things in a case of everyday experience. When a stone falls to the ground we say, for short, that its fall is due to the earth's attraction. In reality the stone's fall is because of the mutual attraction between it

and the earth. The stone pulls at the earth with exactly the same force with which the earth pulls at it, and consequently the earth must move as well as the stone; but the mass of the earth being enormously greater than that of the stone, the force which is strong enough to give to the stone a velocity of thirty-two feet in a single second gives to the earth in that time a velocity so infinitesimal as to be utterly beyond the power of measurement. And yet it is demonstrable that actually the earth rises, to however small a distance, to meet the descending stone. Toss a stone into the air. To do this requires an exertion on your part of a force acting upward. There must be an equal reaction, acting downward. During the time of the action you press upon the earth with your feet with more than your actual weight and that of the stone which you hold in your hand combined, and for the time the earth has, not merely to sustain the weight of you and of the stone, but also to resist the force which you have interposed between it and the stone. While the stone is impelled upward the earth is pressed downward, but being an enormously massive body, it is moved, of course, to only an infinitesimal distance by a force which may hurl a stone weighing a pound to a height of, say, twenty feet. That the reaction here described really takes place, though its effect is imperceptible, one may easily convince himself by making the experiment of throwing a stone upward while standing in a small boat.

Hold with both hands a large stone and, having awaited a moment when the boat is quite steady, suddenly heave the stone upward and overboard. You not only set the boat to rocking violently, but you can also feel it momentarily settle beneath your feet. Had you stood upon the deck of a vessel and done the same thing, the same result would have followed, though less noticeable, and something similar must happen when we perform acts of this sort standing on the firm ground. Theoretically we move the whole earth when performing such acts, and even when we jump, or run, or walk. But the earth is an elastic body and, besides, the ground on which we stand, is more or less compressible or yielding, so that really by far the greater part of even the small earth-pushing force which we exert is exhausted within a few inches of our feet in disturbing the soil. The famous philosopher, Archimedes, is said to have made the shrewd declaration that with a lever he could move the earth, had he a fulcrum for his lever. Had he known as much about the laws of force and motion as he did about levers, he would have been able to add that by jumping for an hour he could move the earth as much as he could move it in that time with the longest lever imaginable.

We can now give a physical explanation of a fact of which we are all perfectly well aware, that one cannot lift himself by pulling at the handles of a basket in which he stands. To lift any body, whether one's self or any other body, one must press downward with exactly the same force with which he presses or pulls upward. The reaction is exactly equal to the direct action. In the case supposed the push with the feet is exactly equal to the pull with the hands, and as a consequence the basket, being acted upon by two contrary and equal forces, remains where it is.

A familiar case of reaction is that of the "kicking" of a gun. A musket or a rifle is thrown back against the shoulder at the time of its discharge; a cannon always recoils when fired, and some provision must be made in its mounting to allow for this recoil and to check it as quickly yet as easily as possible. A small field-piece is merely mounted on wheels, and a clear space is left behind it in which the carriage may roll back. A large gun is so mounted that it can slide backward on its carriage, and its recoil acts against springs, usually pneumatic. After what has been said, the recoil of the gun is easily accounted for. The force which impels the ball, obtained by the sudden generation of a gas which requires more space than does the powder which contains its elements, presses against both the ball and the gun. Motion is given to them both, but in contrary directions; they are forced apart, as when two boats are forced apart with an oar, and were they of the same weight they would move with equal velocities. The gun would then be as dangerous as the bullet. But in fact the gun always outweighs the ball, and since it is more massive, the velocity imparted to it and the distance to which it moves are pro-

portionately less. This is the theory of the kicking of a gun. The fact is one which must always be taken acoount of in gunnery, and which the sportsman may consider as constituting an ineradicable defect of a fowling piece. Experience as to the proper way of holding a gun enables him to reduce its effects to a minimum.

Here we may consider the practical question why it is that a foul gun kicks more than one which is clean. It is because the ball encountering excessive friction does not move out of the barrel of the gun so quickly as it does when the bore offers less resistance. The expansive force of the powder therefore has a longer time in which to act upon the gun than when the bore is clean, and since the amount of motion given to a body by a given force is proportional to the time during which the force acts, the foul gun feels more the force of the powder than the clean gun. But ought not the bullet also to be affected similarly and therefore to acquire more than its usual velocity? No; the friction takes from its velocity more than the unusual time of the action of the force imparts to it. It is, in fact, because the bullet moves slowly that the gun gets more than its usual amount of motion. Moral: if you are a soldier, keep your musket or rifle clean, for the sake both of yourself and the enemy.

WORK; ENERGY

IN the performance of manual labor we exert our muscular force in two ways. First, we may exert it directly and continuously in a steady pull or push, as when one rows a boat or forces a spade into the ground or saws wood; secondly, we may apply it in a concentrated form, as when one kicks or bats a ball or drives a nail or hammers metal upon an anvil. In this section we will try to gain some clear idea as to the relation between these two ways of applying force.

Work Work, in the sense in which this term is used in mechanics, means the forcible movement of a body from one place or position to another. Let one reflect a moment and he will see that this definition applies to all sorts of manual labor, as well as to work done by natural forces other than muscular. The things moved are of an infinite variety and there are various ways of moving them; but in every instance in which one would say that work has been done something has been moved. A force which moves nothing, as the force of gravity exerted upon a stone which lies upon the ground, does no work; it accomplished nothing. But lift the stone from the ground and leave it without support, and at once gravity becomes active; it pulls the stone down — it does work. Again, when you lift the stone you do work upon it. But if after having raised it three feet from the ground, say, you stand and hold it in that position you no longer do work, as the physicist understands work, however great may be the muscular exertion required to keep the stone from falling. What you do now is simply to counterbalance the force of gravity, and when two forces acting in contrary directions are exactly balanced each neutralizes the action of the other and neither of them does work.

Energy We have next to define the term energy. Our ordinary use of the term will give a clue to the way in which it is used in mechanics. It is applied to *bodies*, not to *forces*. By the energy of a body is meant its capacity for doing work. A moving body is possessed of energy because of the force which is stored in it. It cannot be brought to a state of rest without acting upon and moving some other body, or some portion of another body; that is to say, in coming to a state of rest it will do work. A body may also possess energy — a capacity for doing work — due solely to its position or the position of its parts. Thus, a stone lying upon the ground is without energy; it is powerless to do work. But raise the stone from the ground and place it upon a shelf. In raising the stone you have done work upon it — you have moved it against the force of gravity which held it to the ground; and now, as the stone lies upon the shelf, it is in a position to do precisely the same amount of work as has been done upon it, if only it is given an opportunity. Remove the shelf and the stone will fall to the ground, and in the course of its fall it

may be made to turn a wheel and to move a piece of machinery; or, if not this, it will do its work upon striking the ground — will bruise or break something, or will do some other work, desirable or otherwise. That in its fall it will do the same amount of work as was done in raising it, will be apparent if we will consider the case of a clock weight. The weight pulls at the string which connects it with the clock wheels with exactly the same force as is required to lift it from the ground. Instead of winding the clock and letting the weight run the clock as it falls, we might, had we the patience and were time of no value, dispense with the weight and pull at the string, with the same force with which the weight pulls, during the twenty-four hours and thus keep the clock running. If the clock is run by a spring, then it is the spring which possesses the energy, due to the tension caused among its particles by forcibly altering their relative positions in bending it.

Kinetic and Potential Energy

It is designed in these articles to avoid technical and unusual terms as far as possible, yet it may not be amiss to explain here two terms which will be found in any work on physics,— *kinetic* and *potential* energy. The former word is derived from a Greek word which means "to move." Kinetic energy is the energy which a body has because of its motion. Thus the energy of a moving cannon ball is said to be *kinetic;* the ball will do work in coming to a state of rest. The energy due to advantage of position, as that of a stone resting on a shelf, is *potential*, or possible, energy. A body possessed of this sort of energy will do work whenever it has an opportunity, that is, when any restraining force which may for a time prevent its working is removed. The energy of a bent spring, of a compressed gas, of gunpowder, is potential. The spring or gas or powder lie idle until they are given a chance to work. One of the fundamental doctrines of modern physics is that energy, like matter, is indestructible — that there is in the Universe just so much energy, the sum total of which can neither be increased nor diminished. A part of it is kinetic; a part of it is potential. The two kinds of energy are continually being changed from one to the other form and are continually transferred from one body to another; but in the process of the change no energy is ever lost or destroyed. If it disappears from one place or in one form, it turns up in another place or another form.

The Foot-Pound

Since work, as we now understand the term, consists in moving something, the amount of work done in any given case depends, obviously, on the weight of the thing moved or the resistance overcome in moving it and the distance to which it is moved. If one carries a bucket of water five rods, he does a certain amount of work. If he carries it ten rods, he does twice as much work. If he carries two buckets, he does twice as much work as when he carries only one. The physical exertion required for carrying buckets of water might be directed to performing any other kind of manual labor — to planing boards, digging a ditch, lifting logs of wood. Work is work, whatever is accomplished. The simplest kind of work is lifting, or at least this is the kind of work the most easy to measure, since it amounts merely to overcoming the force of gravity, a known and constant quantity. For this reason it is used in mechanics as a representative of work in general.

The English Standard unit of work is the foot-pound. By this is meant *the work done in raising a pound weight to the height of one foot.* When a person does work of any sort which costs the same exertion as to lift a pound weight to the height of one foot, he does one mechanical unit of work. It matters not whether the work is done quickly or slowly. Time does not enter into the question in measuring work. It is only when we estimate the force required that we must take an account of time. Thus, to dig a ditch requires the doing of a certain amount of work. One man will dig the ditch in six days; six men will dig it in one day. But when the ditch is dug it stands for so much work performed, whether it was dug in one day or in six.

To carry a pound weight to the height of sixteen feet, one must do, exclusive of the work of raising his own body, six-

NOTE—The *foot-pound* must not be confounded with the *foot-poundal.* The foot-pound is a measure of *work;* the poundal, defined on page 285, is a measure of *force.*

teen foot-pounds of work. If he stands on the ground and tosses the weight to that height, he does the same amount of work in a different way, and so, too, if he draws it up with a string. Any way of getting this pound weight from one position to another sixteen feet above it involves work to the amount of sixteen foot-pounds. And now suppose that the stone is allowed to fall. It will do sixteen foot-pounds of work on its way down or upon striking the ground, if during its descent it was not connected with any piece of machinery. If it had been raised to the height of thirty-two, forty-eight or sixty-four feet instead of sixteen, then two, three or four times as much work would have been done upon it, and in its fall it would itself do two, three or four times as much work.

Energy and Velocity

We have now to ascertain the relation between the velocity of a moving body and the work which it will do in coming to a state of rest. We will suppose that a leaden ball weighing one pound is allowed to fall from a height of sixteen feet, and we will take no account of the resistance of the air. This ball will reach the ground in one second, and it will be moving at the instant when it strikes with a velocity of thirty-two feet a second. In coming to a state of rest it will do, as we have just determined, sixteen foot-pounds of work, and in order to be able to understand what that means in this particular case we will suppose the ball to fall upon a bed of moist clay, which it will penetrate to a certain depth. Now let the ball drop from a height of sixty-four feet. It will reach the ground in two seconds, and it will strike with a velocity of sixty-four feet a second, or twice the velocity which it had in the first case. How far will it penetrate the clay? It has fallen from a height four times as great as in the first case. Therefore it should have four times as much energy, — should be able to do four times as much work; it should penetrate to *four times* the depth which it did when it fell only sixteen feet.

This is precisely what it will do; and yet its velocity is only *twice* as great as in the first case. Were it now to be dropped from a height of 144 feet, or nine times as great as at first, we should find that, though its velocity was only three times as great, it would penetrate to nine times the depth. In a word, we should find in every trial which we might make that its energy was proportional, not to its velocity, but to the *square* of its velocity. Had the ball weighed two pounds instead of one, it would have done in each case twice as much work as it did, — would have made a hole in the clay twice as large. Since it matters not how the motion is given to the ball, whether by the force of gravity or that of gunpowder, the law which we have just discovered is applicable to every moving body. *The energy of a moving body is proportional to the product obtained by multiplying its mass, or weight, by the square of its velocity.* This product — divided by 2, for mathematical convenience — is known in mechanics as "vis viva," or live force, which we hope to discuss further next month.

Practical applications of the Law

Why does the recoil of a gun do so little damage as it does? A little figuring based on this law of "vis viva" will explain. Suppose that a bullet weighing one ounce is shot with a velocity of 960 feet a second from a gun which weighs ten pounds. The gun weighs 160 times as much as the ball, and the velocity given to it will be less than that of the ball in the same proportion. That is, while the ball is thrown in one direction with a velocity of 960 feet a second the gun will be thrown in the other direction with a velocity of but six feet a second. To compare the energies of these two moving bodies we must square the velocity of each and multiply this square by the body's weight. Squaring 960 and multiplying by 1 (ounce, weight of ball), we get a product 921,000. The square of 6 (36) multiplied by 160 (weight of gun in ounces) is 5,760. The first product may be taken to represent the energy of the bullet; the second, that of the gun. Dividing the first by the second, we get a quotient 160. This means that the energy of the ball is 160 times that of the gun. That is to say, the ball will penetrate a plank 160 times as far as a ball of the same size would do were it placed against a plank and were the gun butted against the ball. Since the butt of a gun is made broad, so as to distribute the force of its blow over a considerable surface, and is held against a yield-

ing shoulder, its "kick" is not a serious matter.

About driving nails. I find by experiment that an ordinary wire nail two inches in length can be pressed into a soft pine plank by a weight of about 72 pounds. This is a greater force than one can readily apply to the nail by pressing upon it with the face of a hammer. But raise the hammer, which weighs, we will say, one pound, to the height of three feet and strike the nail with it a smart blow. You will probably drive the nail into the plank about an inch. Swinging the hammer will not cost you nearly so great an exertion as when you try vainly to press the nail into the board, yet you will do work. In swinging the hammer, you will concentrate your force on it, not, perhaps, all the force at your disposal, but enough for the purpose. You will do work upon the hammer—will give it a certain velocity; and the hammer, in its turn, will do work upon the nail. Its force must be taken out of it before it will come to rest, and this is to be done by the resistance offered to the nail by the fibres of the wood. Time is required for this act, and during this time the nail moves perforce with the moving hammer. I find that dropping a pound weight upon this nail from a height of six feet will drive it into the plank about an inch. The effort required, then, to drive this nail one inch with a hammer is equal to that required for raising a pound weight six feet; or in other words, in driving the nail to that depth, one will do six foot-pounds of work.

The pile-driver presents another instance of cases in which the "vis viva" of a moving body is used to accomplish work which cannot be done conveniently by a steadily applied pulling or pushing force. An equivalent of the work done in raising the weight—in placing it in an elevated position where it has "potential energy"—is subsequently done by the weight, when in its fall its *potential* becomes transformed into *kinetic* energy, upon the pile. Whatever amount of work was done upon the weight, whether by men turning a winch, or by a steam engine, the same amount is subsequently done by the weight upon the pile, excepting, of course, the small amount diverted to overcoming friction—to generating heat.

ANSWERS TO PROBLEMS

1. A stone will fall from a state of rest 64 feet in two seconds (16 multiplied by 4, the square of the time); 400 feet in five seconds; 1,600 feet in ten seconds. It will fall 240 feet in the eighth second.

2. If the stone had started from a state of rest, it would have fallen in five seconds 400 feet. Since it started with a velocity of 40 feet a second, it will travel in five seconds 200 feet because of this velocity alone. Hence the whole distance fallen will be 600 feet.

3. The balloon is at a height of 3,600 feet. The bullet will reach the ground with a velocity of 480 feet a second. In the twelfth second it will fall 368 feet.

4. This problem may be solved by merely reversing the operation performed under Rule III. Divide 144, the distance fallen, by 16, and the quotient, 9, is the square of the time. The stone will reach the ground in three seconds—9 being the square of 3. In three seconds a stone falling from a state of rest will acquire a velocity of 96 feet a second. This is, therefore, the velocity with which it must be thrown upward in order to rise for three seconds and reach a height of 144 feet before coming to a state of rest.

5. The bullet will continue to rise for 30 seconds. It will ascend to a height of 14,400 feet. In the tenth second it will rise 656 feet.

6. The stone will reach the ground from a height of 2,304 feet in twelve seconds. It will acquire a velocity of 384 feet a second.

7. A battering ram weighing 2,000 pounds and moving 6 feet a second has the same momentum as a cannon ball weighing 12 pounds and moving 1,000 feet a second. There is the same amount of force stored in each. But the ball will do vastly more work in coming to a state of rest, because of its greater velocity. The problem is quite similar to that of the bullet and the gun, considered above. The square of 6 (velocity of ram) multiplied by 2,000, is 72,000, the square of 1,000 (velocity of ball) multiplied by 12 is 12,000,000. Dividing the second product by the first, we find that the "energy" of the ball is 167 times that of the ram.

QUESTION DEPARTMENT

OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

THE answers to SELF CULTURE questions for July will be found in various volumes of the new Encyclopædia Britannica. The volume and page are indicated after each question.

July 1. What degree of civilization appears to have been attained by the races who preceded the red men in the occupation of certain parts of America? Vol. I, pp. 692, 693

July 2. What was Edgar Allan Poe's avowed object in writing the strange poem "Ulalume?" Vol. XIX, 260. See also p. 255

July 3. What events led up to Constantine's selection of Byzantium as the capital of the Roman world (330 A.D.), the city being renamed Constantinople in his honor? Vol. VI, pp. 298–301

July 4. What accidental circumstance turned Sir Walter Scott into the path of prose fiction, where his greatest successes were achieved? Vol. VIII, p. 433. See also Vol. XXI, p. 544

July 5. What peculiar construction secures the eight indispensable qualities which enable the lifeboat to go to sea in any weather? Vol. XIV, p. 570

July 6. What origin and objects of the first three Gospels are indicated by the internal as well as by the external evidence? Vol. X, pp. 789, 814

July 7. What was Europe's debt to Poland and how was it paid? Vol. XIX, pp. 296–299

July 8. To what hieroglyphic systems of writing can all known alphabets be traced? Vol. I, p. 601

July 9. How does the act of respiration take place, and what is its physiological effect? Vol. XX, p. 474

July 10. What was the condition of Israel from the beginning of Herod's reign to the siege of Jerusalem by Titus? Vol. XIII, pp. 425–428

July 11. What imperfect systems of arithmetical notation were in use prior to the introduction of the common Arabic numerals? Vol. II, pp. 524, 525

July 12. Why were the Germanic tribes which invaded Britain in the 5th century not absorbed by the conquered population, as were the ones which overran the provinces of the Roman Empire? Vol. VIII, pp. 266–271

July 13. What was the nature of the famous *Essay on Population* which brought so much undeserved reproach on its author, Malthus? Vol. XV, p. 343

July 14. What is the importance of "mimicry," or the deceptive resemblances exhibited by various species of plants and animals, and how do scientists explain it? Vol. XVI, p. 341

July 15. What was the military capacity of the nations subdued by Alexander the Great? Vol. I, p. 480

July 16. What is the difference between solar and lunar eclipses, and why do they occur in such variety? Vol. II, pp. 802–804

July 17. Which is the best developed organ of sense in fishes? Vol. XII, pp. 652, 653

July 18. What battle first showed Europe that Napoleon was not invincible, and raised hopes fully realized at Leipsic later? Vol. XVII, pp. 214–220, 221

July 19. How did the organized body of professional assassins, known in India as Thugs, ply their trade? Vol. XXIII, p. 326

July 20. To what ends did Madame de Maintenon (for thirty years "the unacknowledged queen of France") exert the remarkable influence which she possessed over Louis XIV? Vol. XV, p. 304

July 21. What appears to be the most valuable of Descartes' numerous contributions to the advancement of knowledge? Vol. VII, p. 115

July 22. What conditions rendered possible the invasion and subjugation of Spain by a handful of Arabs, 711 A.D.? Vol. XXII, p. 309

July 23. What is the scientific importance of determining accurately the parallax of celestial bodies? Vol. XVIII, p. 245

July 24. What interesting particulars have been recorded concerning the migration and nesting of birds? Vol. III, pp. 764, 771

July 25. Why is cavalry of less importance in modern warfare than it was in the times of Frederick the Great and Napoleon? Vol. V, p. 261

July 26. In what respects will Massinger's plays bear comparison with those of Shakespeare, who was born 20 years earlier? Vol. XV, p. 618

July 27. What was the nature of Law's "Mississippi Scheme," which wrought such havoc in French finances in the earlier part of the 18th century? Vol. XIV, p. 367

July 28. What still remains of Hadrian's Wall, the great fortification designed to protect Roman Britain from barbarian attack? Vol. XI, p. 364

July 29. What gave rise to the "Coolie" labor system and what were its evils? Vol. VI, p. 333

July 30. What caused Harriet Martineau to engage in literary pursuits, and what is her own estimate of her abilities? Vol. XV, p. 583

July 31. What difficulties have to be met in constructing calculating machines for performing numerical operations? Vol. IV, p. 654

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V AUGUST, 1897 No. 5

RIVER FLOODS:

AN ENGINEERING PROBLEM

RIVERS that drain vast alluvial basins are bad neighbors. If they be of any magnitude their periodical floods work great devastation upon the lands that adjoin them. Thus, although China is one of the most densely populated as well as one of the oldest countries, the inundations of the Hoang-ho river cause, not merely a destruction of property, but a loss of life not equalled elsewhere in the world in the magnitude of the catastrophe. Like floods occur on the Ganges, the Irawadi, the Mekong and the Amazon rivers, although we hear less about them. Every year Americans read reports of the rise of floods in the Mississippi basin, and at periods of from five to six years the inundations are so excessive as to cause appalling disasters and fill the newspapers for weeks with accounts of them. Those of 1897 have been particularly notable, although when the waters subside and an authentic account is taken of the losses caused by them, it is uniformly discovered that the contemporary reports have been greatly exaggerated. Thus in April it was estimated that over 20,000 square miles were overflowed, 300,000 persons driven from their homes, and property losses of $96,000,000 incurred. When the waters subsided it appeared that not half this damage had taken place.

The reason why the losses are overestimated at first is because of the effect upon the imagination of witnessing vast floods overtopping or bursting through embankments and sweeping over farms, and of seeing families fleeing in terror from their homes. On the other hand, lands which are periodically inundated are sparsely populated, and by people so poor as to be willing to take well-nigh desperate risks. No expensive improvements are undertaken where they are in danger of being destroyed every few years. Hence, it was to be noticed that the refugees last March and April from the drowned lands, were largely colored persons. Again, it is the winter floods that are the fiercest and largest, which come before planting time, and when they subside they leave the submerged farms enriched by the silt they deposit upon them. Just so the Egyptian peasant finds his ground fertilized by the overflowing of the Nile.

The control of the Mississippi floods is a problem of serious and pressing importance, since it involves not only the preservation of human life, but also the reclamation of a territory equal to all of New England excepting Maine, and hundreds of miles of navigable waters. In no country of Europe is there an engineering problem so vast as this, and hence the operations on the rivers of Holland, or on the Danube, the Elbe or the Weser, do not furnish adequate data for an American system of river improvements. Besides this, the question in the United States is complicated with constitutional and political considerations. The story of the legal difficulty runs as follows: A system of levees began about New Orleans as early as 1717, when the territory belonged to France. These banks were gradually extended and strengthened until the country below the Red River was defended by continuous, though inadequate, embankments built by state authority. In 1850 Congress gave over all the unsold swamp and over-

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flowed lands of the government to the States in interest, in order that they might provide a fund for extending levees along the course of the Mississippi. The people of Louisiana believed that, if there were confining embankments on the upper reaches of the river, the restrained waters would sweep down upon their levees, overflow or break through them, and submerge the lowlands of that State. Therefore they raised the constitutional question of the right of Congress to promote internal improvements within the jurisdiction of a State. From that time until the Civil War began, Congress limited its work to a hydrographic survey of the river under the direction of Captain A. A. Humphreys, afterwards brigadier-general, and to this day the chief authority upon the characteristics of the river.

It may be said that the present system, what there is of it, has been constructed subsequently to the war, for during hostilities the levees were neglected and well-nigh ruined. Again General Humphreys was placed at the head of the government surveys, but the States themselves promptly entered upon the work of restoring and enlarging their levees, each under Boards and pursuing plans of its own.

A disastrous flood occurring in 1874, Congress created a commission to prepare a plan of defense against such catastrophes, but when report was made the next year and the government proposed to execute it, the constitutional power of Congress to authorize the work was again called in question, and the result was a compromise, which is still observed. Although nothing is said on the subject in the Constitution, the authority of Congress over navigable waters is generally conceded, and in 1879 a commission was appointed under a Congressional statute, consisting of seven persons, "to mature plans to correct, permanently determine, and deepen the channel, to protect the banks of the river, to improve and give safety to navigation, to prevent destructive floods, and to promote and facilitate commerce." Three years later large appropriations began and have since been continued, but the Commission chiefly restricts its work to the channel and river-bank, leaving the levee system to be devised and carried on by the States. However, under its authority the Commission has spent considerable sums in repairing levees where they are broken or weakened, but that is merely auxiliary to the plans and operations of the States.

There is thus a double-headed scheme put in practice, which is unfortunate, since the general government and the State Boards do not always agree, nor do the plans of Tennessee and Arkansas invariably coincide with those of Mississippi and Louisiana. The States, then, construct the embankments intended to prevent the floods from drowning out their bottom lands, and these embankments are not built at the water's edge nor do they follow the sinuosities of the stream. The United States Commission takes charge of the river banks, protecting them, where the impinging of the current threatens to cave them in, with brush mattresses, stone ballast and training walls, building high-water banks intended to be submerged in times of flood, but also to narrow the channel and set up a scouring current in the stream to produce deeper water, and projecting jetties into the water for like purposes.

Some light will be thrown upon the operations of the United States by noting two instances of its work. It caused the construction of Captain J. B. Eads's jetties in the South Pass of the Mississippi delta, whereby the bar that had formed at the Gulf was cut and a channel thirty feet deep was secured from the sea through the Pass. Again, between the mouths of the Ohio and the Red Rivers, a distance of nearly 800 miles, there are 150 miles of shoals formed in forty-three different places, on which the depth of water varies from five to ten feet, thus impeding navigation at low water. To make and keep open a navigable channel through these shoals by various expedients of training walls, dredging, contracting the channel and making occasional cut-offs, is the principal business of the United States Commission.

There are two flood periods to be expected every year in the Mississippi valley, one known as the winter flood, which begins in February and reaches its greatest height about the first of April, and the June rise, which is seldom formidable. Obviously an inundation is threatened when the capacity of the river channel is not sufficient to carry away the volumes of water poured into it by its tributaries. The winter flood is

attributable to the fact that the ground is frozen, and hence the rainfall, or the melting of the snow, supplies waters which are sent down into the valleys as if sliding on a roof. When the ground is open, ordinary rains are largely absorbed into the soil and so escape but slowly and underground into the water courses. The drainage is fed no faster than the volumes of water contributed can be carried off in the ordinary channels. Indeed it is by this process that the channels were mostly formed. When this natural absorption ceases under the influence of the frost, the floods are bound to come from the melting of the snow in the northern valleys as the sun ascends the ecliptic. The June rise is to be accounted for by the fact that an isopluvial line (to coin a word for rainfalls equivalent to isothermal for temperatures) extends from the northern border of Montana through Wyoming, Colorado and Northern Texas, thence across the Arkansas valley and along the northern slopes of the Ohio as far as Pittsburg, where it strikes off to the northwest. Within this line, from one-third to one-half of the entire rain of the year is precipitated in the three months following the first of May. In this area are embraced all the principal tributaries of the Mississippi except the Red and the Yazoo rivers, to mention only those whose freshet-volumes are dangerous.

Officially kept tables show that excessive floods, overflowing or breaking through levees, recur every five or six years. The reason for this phenomenon seems to be as follows: the Upper Mississippi, the Missouri, the Ohio, the Platte, and the Arkansas rivers drain widely different areas of latitude, and they also differ in length. Now if the floods of the Arkansas were followed by those of the Ohio, and those in turn by those of the Missouri and Upper Mississippi, the lower river could carry them away as fast as they are received. There would be a longer period of high water, but the volume would be less. What is lost in time is gained in security. This is what happens in normal seasons. But if the rise in two or more great tributaries is simultaneous, if, for example, there is high water at Cincinnati and Omaha at the same time, then the floods below Memphis are quite sure to turn into inundations.

Another feature of the Mississippi River is to be noticed. The scene of the most frequent, turbulent, and devastating inundations is that part of the river stretching from Cairo to Baton Rouge, or from the mouth of the Ohio to some seventy miles below that of the Red River. It is within this stretch of 850 miles that the river is most tortuous and changeful. It bends upon itself in great loops, at the base of which high water frequently makes a cut-off, leaving behind it lagoons and land-locked crescent lakes. Islands are frequent in the channels, but they are not always permanent. At times the river eats out a new course for itself, and steamboats make their way to-day where yesterday the plough was at work. "Two eroding bends gradually approach each other until the water forces a passage across the narrow neck. As the channel distance between these bends may be many miles, a cascade, perhaps five or six feet in height, is formed, and the torrent rushes through with a roar audible for many miles. The banks dissolve like sugar." A cross section of the river at high water between these points gives a prism of 200,000 square feet, but the cross sections of the Upper Mississippi, the Ohio, the Missouri, the Arkansas, and the Red rivers, at their mouths in high water, together make a prism of 435,000 square feet. The excess is the volume that the lower Mississippi must provide a discharge for, either by the acceleration of its current or by inundations. The extreme range between high and low water is 51 feet at Cairo; it is 44 feet at Red River landing.

At distances of from five to twenty miles on either side of the river the bluffs begin to rise that divide the uplands from the bottoms, and these bottoms for 500 miles are the area subject to overflow. It is an area embracing 32,000 square miles, and that for the protection of which the levees are formed. For a mile going inland these bottoms descend seven feet, after which they slope upwards at the rate of six inches to the mile. In other words, the bottoms are a sort of trough on each side of the river, averaging fifteen miles across, until the elevations of the edges are the same. There are points where the bluffs approach the river, and these are the sites of the towns, as Natchez, Vicksburg,

Arkansas City, Helena, and Memphis. It will now be seen that the river has built for itself banks that are higher than the adjoining lands. It flows in an elevated trough, in which, when the banks are full, the surface of the stream is, on an average, seven feet above the bottoms. Hence arises a difficulty in making a levee system of protection. All rivers flowing sluggishly and tortuously through low alluvial lands are continually depositing silt in the channel and thus raising themselves above the adjoining country. The embankment system hastens this process. There are embanked rivers in Japan, the bottom of whose channels is 40 feet above the land-level; and so high have the levees of the lower Po, in Italy, been raised that the government has abandoned increasing them. Hence, if the levee system should alone be relied upon to restrain the lower Mississippi, the time would come when the whole bed of the river would be a trough above the land-level, and a breach in the embankments would pour the whole volume of the river upon a submerged country. The system would become not only a very perilous one, but a gigantic and ceaseless operation, the hazard increasing as the embanking went on. Surely there is here a very obstinate and appalling problem for our engineers.

Consequently, the United States Commission has hold of a very necessary part of the work. Every effort should be used to make the present channel adequate to discharge the waters poured into it, and this is incidental to making the river navigable. A chief aim of the government engineers is to cause the river to do the work of scouring its own bed deeper. It is for this reason that they build training embankments intended to be overflowed. The primary object of such walls is not to prevent an inundation, but to direct the current. The breadth of the river is systematically contracted in order that what it loses in width it may gain in depth. This work has a powerful auxiliary in modern and novel dredges. For river bottoms in alluvium machines are now built with belt-conveyers that deliver the silt at any point on the shore. Some of these conveyers have a radial swing of 120 feet. Other types of river dredges are fitted with discharge pipes which may be carried long distances, the excavated material being thrown in at one end and escaping by gravity at the other. There are also other mechanisms for cutting through shoals and bars, letting the current carry away the disturbed silt. But this sort of labor must be ceaseless. It is the annual price the country must pay to keep these waters navigable. At the same time, successful operations in deepening the channel render the levee problem somewhat simpler.

European experience does not cover well the conditions presented to the engineer by the Mississippi river. There the standard processes of preventing or mitigating floods are: the improvement of the channel by straightening it, and by catch-water drains that convey the rainfall to a confluence with the stream lower down; embanking the channel; pumping. The latter expedient cannot, of course, be applied to the vast inundations of the Mississippi valley, if for no other reason, than because, on the subsidence of the river, the overflowed lands naturally drain themselves much faster than it could be done artificially. The objections to embankments have already been discussed.

A long series of government observations, made before the war, established these points concerning the Mississippi: "(1) That no diversion of the tributaries is possible; (2) that no reservoirs artificially constructed can keep back the spring freshets which cause the floods; (3) that the making of cut-offs, which had sometimes been advocated as a measure of relief, so far from being beneficial, is in the highest degree injurious; and (4) that while outlets within proper limits were theoretically advantageous, they are impracticable from lack of suitable sites." If these conclusions are final, there is no other expedient possible for preventing inundations than properly placed and constructed levees. Many schemes have been proposed to meet the difficulties, but they are of little value. The notion that afforestation of the upper valleys of the tributaries would serve to stay the rise of freshets, by holding the waters in the matted soil and by promoting evaporation through immense areas of foliage, must prove inadequate. It has already been noticed that the bed of the river is in a trough elevated above the land-level. This is no recent work wrought within the memory of man. It serves to show that the

conditions existing to-day have existed for immemorial time. The river has long been what it is now, only the pressure of population upon its banks has served to call attention to characteristics that two generations ago were unheeded. Impounding excess of water in reservoirs, the United States Commission declares to be impracticable. Really, this is what happens when the bottom lands are submerged. These overflows are natural impoundings, where the water escapes from overcharged channels, and whence it flows less turbulently and dangerously back and lower down to the river channel, and is borne quietly to the sea.

Within the flood region the stretch of river below Baton Rouge is the most secure. It was so in the spring of 1897; it has proved so again and again. The old fear of the Louisianians, that embankments above them would subject them to increased risks, has proved groundless. In this stretch of 250 miles the river is narrower but much deeper. Until the gulf delta is reached, there are in ordinary seasons a 100 feet of water in the channel. Moreover, the fall of the river is very slight. The tides in the gulf are so small, only about fifteen inches, that they count for nothing. At the mouth of the Red River the surface of the Mississippi at low water is only about five and a fifth feet above the mean level of the Gulf. The consequence is that in this stretch the current it much slower, and, therefore, less turbulent and erosive. The embankments are put to a less strain; the floods flow away more evenly and tranquilly; and, also, there are more natural outlets through the bayous.

What has now been said will show the reader some of the extreme difficulties of river-engineering to be encountered in the attempt to control the lower Mississippi River. It would seem that a certain margin of riparian lands must be abandoned to inundations, and the matter to consider is how to reduce this breadth to a minimum and to reclaim as large an area of the bottoms as possible. In the first place, the levees ought not to be built along the river margin, but some distance back from it, say a half-mile on either side, and they should not follow the sinuosities of the stream. This surrender of land would give a channel wide enough to carry away even severe floods, and the straightening of the line of embankment would greatly shorten it and reduce its cost.

Great care should be taken to make the levees, not only high enough to overtop the most exceptional floods, but impervious to the percolation of water. As soon as water is seen to ooze through on the land side of an embankment that part of the levee is doomed. The breach will follow suddenly, like the falling of a tottering wall. It has been proposed to face the river side of the levees with sheets of iron and the idea is not impracticable, even if expensive. It would be cheaper to cover them with hydraulic cement, but tight in some way they should be made.

Hitherto, the main reliance has been on the well-known Bermuda grass, which, taking root at every joint, gives a compact, continuous sod, calculated to resist the action of the water. Long submersion, however, seems to loosen its hold upon the alluvial soil, of which the levees are made.

A second line of levees could be constructed inland from the outer one. This would have less strain to bear than the one near the river, as the erosive violence of the flood would be checked at the breach of the first. The space between the levees would impound a vast volume of water until it could flow harmlessly away, and the lands behind the second embankment would be secure from inundation.

Expedients like these are, in the end, pure questions of economy. When the lands, through the pressure of population, become worth it, they will be effectually reclaimed. Until they do, there will be drowned lands every few years along the lower Mississippi. Meanwhile, the efforts of the government to keep the river navigable will aid to reduce the dangers of the levee system, already described, to the lowest point and keep them there. It is more than probable that better and cheaper work would be done if the control of the river were consigned to a single agency. The United States is the only agency with adequate authority and wealth to take charge of the matter. It is an inter-State and a national interest, and every disastrous flood brings nearer that day when the whole subject will be finally and fully committed to the general government.

D. O. KELLOGG.

LITERATURE AS A CAREER AND LITERATURE AS A LIVELIHOOD

SECOND PAPER

LITERATURE is creative or appreciative in character. Literature is dogmatic or speculative. Literature is a broad term and one not absolutely defined.

Literature has not infrequently, in times past, developed unexpectedly from the lives of certain persons who were surprised to find that they could write, and undoubtedly it will be so born in times to come, for "out of the fulness of the heart the mouth speaketh." However, no one can reasonably expect that he may awake some day to find himself a famous writer, and it is undoubtedly true that with the gradual going out of fashion of the Muses and the steady increase in the possibilities of literature as a fore-determined profession or career, that few persons who aspire to literary production aspire to it in any such casual and uncertain way. Young men and women by the hundred want to know what chances there are for them in the world of letters as compared with the chances for success in other directions. Most editors and publishers get an idea that there are at least several millions of persons in this country who want, not to write, simply, but to make a living by it. They all specify the living, explicitly.

Now, as the previous paper pointed out, the prospects of living by letters are not good. It is safe to say that there are not a hundred young persons in all the populous ranks of present inquirers, whose prospects of a living by letters are worth envy. There are, perhaps, a thousand or so whom journalism will swallow, with meagre rewards in salary and no rewards at all in the way of fame. Then there are a large number who will recruit the ever large army of "hacks," eking out a more or less precarious living by studying the market and writing to meet its needs. One of these hacks published his "Confessions" in "The Forum," for August, 1895, and the paper will make salutary reading for literary aspirants. This man, who has produced several phenomenally successful books, and who now writes incessantly, finds it possible to make five thousand dollars a year; but I have heard this statement of his questioned by the best-paid writers in the country. These latter think he may have made five thousand dollars in the year whose record he gives, but they seriously doubt his ability to make so much year in and year out, working as he does.

The "Chap-Book" has recently quoted a very well-known writer, author of several books, who has spoken for many of his class in saying that the greatest benefit derived from books by their author is, aside from some fame, the prestige among publishers which successful books give, enabling an author to charge higher prices for his magazine articles. A successful author of large reputation, who makes his living by letters, said recently that he could not afford to write a certain book which his public were clamoring for. The book in question would be, if it were written, a sequel to this author's standard story, which appeared some years ago in the "Atlantic Monthly" as a serial, and afterwards had a large book sale. But the author cannot afford to write the sequel. It would take months, and he must live, so he looks to short stories, articles and the like, to solve the problem of taxes and meat bills and tailoring luxuries.

When one considers that a thousand copies is a fair sale for a novel, and five thousand copies an extraordinary sale, and that about one hundred and fifty dollars is a pretty good honorarium for a novelist's work, — after such time as it has cost him twice that sum out of his own pocket and brought him next to nothing, — then one can realize the folly of those poor individuals who look to a book to retrieve the fortunes of a household. And yet novels pay best of any class of books, on the whole. As far as history and science and criticism and poetry and other forms of literature are concerned, their sale is uniformly less than the sale of most novels, and their emoluments no more, if not smaller. Royalties are a pleasant addition to a steady income, but they are a sorry de-

pendence, except perhaps in one case out of a thousand.

Children's books, of a good character, are in steady demand; but one would not like to make a living by them alone. Short stories are profitable, if of a fair kind. There are, however, more publications that pay five and ten dollars and less for short stories, than there are publications that pay more. The average writer of short stories for standard, first-class magazines gets anywhere from twenty-five to a hundred or one hundred and fifty dollars for a story of four thousand words, or thereabouts. Ten dollars per thousand words is, however, the rate of payment made to most writers of stories, even in the greatest of magazines, except where the author's popularity can set a higher price. A semi-occasional writer gets three hundred dollars for a short story, but the majority get more like ten or fifteen, and the writer who can "place" a short story every month is more fortunate than most of his kind.

The essay is a profitable field for a few, but the number of men and women who can write a tolerable, unhackneyed essay is so infinitesimal that it is small wonder that those who do get handsome prices. Poetry is the most forlorn hope in all the wide, wide world. Not one hundredth part of the verse submitted for publication can be accepted, and less than one quarter of what is accepted, perhaps, is paid for. Books of poetry are almost always published at the poet's expense, and bring small return financially. Practically, there is nothing but glory in poetry, and not much of that, except — to use Matthew Arnold's phrase — to the "saving remnant."

Descriptive articles, travel sketches, and the like, find fair market, but they must be specially unhackneyed to gain entrance to the better magazines in these days, when such descriptive writing is done by every one who goes a-journeying. Articles on current events, current art, current literature, current science, are always salable if well done, but they must show a genius of selection, and considerable grace in presentation. Household philosophy, particularly that part of it which refers to the newly-developed interests of womankind and to the most recent adaptations of child-study to child-training, is welcome in most grades of periodicals and newspapers. Humor pays fairly well, if one has learned to work the field. Anything from a two-line "squib" to a four-column story, that is brightly humorous, is pretty sure to bring fair remuneration if kept long enough "on the rounds." Religious writing offers a large field, but not a rich one, as money goes. There is a big demand for a sort of gruel-like pious literature which reminds one of Squeers' "diluted pincushions without the covers," and which brings the writers from one dollar up to five, for an average article. In the very few papers making up really high-class religious journalism, some writers find a lucrative and pleasant field, but, like all literary fields, it needs careful study before one can make the most of its resources.

These are the main hopes of the average person who earns money by his pen. The plums of the literary market are "serial rights." If an author can get a good periodical to take the magazine rights of his novel or his series of articles, he considers himself blessed among men. This usually means a neat sum for him, and a larger sale for the work in book form than it could have without the advertising of magazine publication. But serial rights are not sold every day in the year, and when one remembers that a magazine uses on an average about six to ten serials annually, and that the number of magazines is about one in one thousand persons who have serial rights to sell, the prospect of living by serial rights fades perceptibly.

It is no disrespect to high purpose to say that the first business of the would-be writer is to find out what people want to buy, and his second business is to set about writing it. After he has established a reputation for himself as a thinker and expounder along safe and popular lines, he may branch out into vagaries and individualities if he wishes; but not frequently does a new writer gain the attention of the public except by taking advantage of the public's taste or whim. A writer has recently got himself some little notice by declaring that the magazines will make no departures, take no risks for the sake of new, untried thought. If this young man would spend a little time pleasing his public, he might hope that at some later day his public would demand all his thought, tried or otherwise; but his present rail-

ing at publishers' subservience to public taste will only make him an object of contempt or pity, as the case may be.

One cannot too early experiment with his aptitude in the effort to determine in what special direction to apply his energies, and so, for the benefit of the probable literary worker, I divide literature as it applies to his possibilities into two classes,—creation and appreciation. To both classes belongs the sub-description of dogmatic literature and speculative literature.

We mean creative literature when we apply the term to a writer who evolves a story or a poem or anything out of his own consciousness, without direct regard to the work of any other man. We mean appreciative literature when we apply the term to the writer who makes it his business to study the world's riches, bequeathed by other men, and to discover their value to a larger public, through the interpretations of a sympathetic personality. Creative temperaments are not infrequently in scant sympathy with the world at large. They live apart, as it were; for the chiefest essential to creation is contemplation, meditation,—isolation, perhaps. Appreciative temperaments must be largely sympathetic. They must be in touch with the spirit of creation, and they must also be in touch with the practical principles of adaptation; they must understand the intrinsic value of creative efforts, and they must know their relative value alongside other creative efforts, besides understanding, which is perhaps, most of all, their probable value to the reading world, the world of living men and women. Some thinkers rate the appreciative, or critical, faculty more highly even than the creative in this day of grace, when creation seems well-nigh exhausted. Whichever is the higher form of literature, both, however, are high if well applied, both are susceptible to infinite originality and personality, to infinitely varying degrees of excellence. Moreover, either may be dogmatic in character, or speculative, which is to say that either creation or appreciation may attempt to be definitive, or may rest content to be suggestive.

Dogmatic literature is not often born of previous determination. Men do not often say, "In order that I may some day write a commentary on Virgil, I will begin a twenty years' course of Latin study,—Latin philology, Latin philosophy, Latin history, Latin literature, and Latin art." Dogmatic literature, adding to the world's definite knowledge, is most frequently born of long and special scholarship. Men practically never elect dogmatic literature as a profession, however they may follow it as a career; and this is true of dogmatic literature whether it be a great, creative (not deductive) philosophy, or a small appreciative essay on the minor poets of the eighteenth century.

Speculative literature is the kind by which most men live, whether it be a novel built on the art principles of "the experimental novel" so cleverly described by Émile Zola, or an essay of interpretation and suggestion, like those on "Questions at Issue," whereon Edmund Gosse offered his considerable opinions.

In the case of dogmatic literature the sole preparation is scholarship, but in speculative literature the preparation is the preparation for life, to which is added the art which selects from life discriminatingly and portrays life with grace and understanding, and the wisdom of this world which knows how to adapt life and art to the needs of the public and the possibilities of making a living. "The Tent on the Beach" was so far from Whittier's ideal of art that he said Barnum was a saint, when it came to swindling the public, compared with him. But he wrote it, none the less, and was grateful for the handsome proceeds. It is usually the least competent and most easily dispensable man who prates loudest about the disparity between his high ideal and the vitiated public palate, though this is not to say that authors' own favorite productions are the ones which the public likes best of all. Sir Walter Scott, we remember, thought "The Antiquary" his best book, Coleridge had small regard for "The Ancient Mariner," and Hawthorne ranked "The Scarlet Letter" below the best of his stories. Moreover, there are few authors of to-day, no matter what their popularity, who do not cherish in some secret drawer what they hold to be their best work, in spite of the adverse judgment of every competent publisher in the country. Appreciation has come to some only after many years, and Keats and Chatterton died in obscurity, and so on, but these are not typical of the whole

truth, and it is mainly true that they who please their public are the real successes. At any rate, they have the more comfortable time of it, for hope of posthumous fame is small consolation to starving genius.

Life and art and wordly wisdom, then, are the essentials to literary success. The equipment for life is the equipment for literature, as far as its substance goes. Life teaches what to say,— life, which is made up of work and waiting, of books and pictures and sunset skies, of whirling storms and silver floods of moonlight, of cathedral calm of forests and hurrying footsteps on city pavements, of love and death and loss and gain, of the memory of childhood and the anticipation of eternity, of the pain of sin and the peace of conquest, of agony of body and spirit, of the exaltation of ministry and the pleasure which is like a child's in a new toy. Of these is literature born, not of any one but of all, each adding to each until some day the spirit labors and a creature of the spirit is produced. Then cometh art, which is selection first and expression secondly. Expression is the blossom of the flower, the feathers on the downy chick, the final touches of hair on brow of little child, which is not vestment but investiture, and marks the perfecting of form.

There is no way to hasten literature or to compel it. It must grow, and art comes of labor infinite and also of a touch bestowed from without, which some attain and others, in dire straining, fail of. When an idea stirs itself and will be born, it is time to let it into the world, but perhaps far from time to show it to the public. Young things are not frequently handsome to look upon, except to their parents. Chicks must wait for feathers and infants for a fringe of hair with perhaps a modicum of backbone, and plants blossom slowly enough after the first green shoot indicates the presence of life. Don't be afraid to adorn your fledglings by slow processes, and so be sure that the world is not laughing at your fond parental pride. For some reason the university does not seem to impress this tactfulness, and this leads a number of editors and publishers to an impatient belief that the university is not a good school for writers. Perhaps it is and perhaps it is not. Certainly it is not what one knows about Aristotle but what one feels about life and love and eternity, that gives him his title to a hearing. Of course, every bit of culture which is not *put on*, but *taken in*, adds to a man's value and to a writer's, but the difficulty with so many, both men and writers, is that they attempt to labor with culture which *is* put on like a ready-made garment. Herein is one great danger of university training. It can extend over only a short period at most and so it must needs furnish its devotees with a great deal of matter which they will have to digest slowly, as life unfolds to them and helps them to lay hold on knowledge and make it practical. Abstract, unapplied knowledge is at a tremendous discount, and there is a certain, indescribable air which is college born and which must die a natural death before its wearer is endurable in literature.

It seems safe to say that in the production of literature every man is his own best teacher. Certainly no one can help another to lay hold on the grace and strength of expression, — no one can help another to know what is the thing to write and what is not. Individuality is the hope of the *littérateur*, for reputations are not made on copies, nor on adaptations, nor on faithful discipleship. All that may be had of the masters of thought and style is some understanding of their sense of beauty in form, and then the hope of the novice lies in seeing not how near he can come to the masters, but how far he can depart from them and still stick to the wide but not elastic standards of beauty which they have helped to formulate. Scarcely a day passes but I, for one, see manuscripts or printed productions of some who have studied models to their own destruction.

It is a by-word in some publishing offices that such and such a writer has evidently read such and such a work and tried to see how near like it she could come. This is fatal in literature, whatever it may be otherwheres. Beauty is not the Venus de Milo, nor the Parthenon, nor the Iliad, nor Gray's "Elegy," though all of these are beauty. For this reason, perhaps, it has been the salvation of some writers that they read little on their own particular lines. Cowper had read only one poem in twenty years, he said, at the time of his greatest poetical productiveness, when he was inaugurating a new era in English poetry. Dick-

ens read almost none at all, it is said, and one might name others, though more writers are wide readers than otherwise. It is one of the things in which individuality must govern. No one can dictate to another.

A book might be written about the various ways in which writers work, the various preparations they make for writing. Every man according to his own wisdom. Some write a poem at a sitting; some, like Gray, take twenty years, or like Moore on "Lalla Rookh," hold eight lines a day a good day's work. Some have been able to write only at dead of night, some write best in the gray dawn, before sunrise. Anthony Trollope used to write just so much every day, regardless of everything, and stop short at his allowance, no matter where he was or how he longed to continue. Conan Doyle is said to have read one hundred works of history in preparing to write "The White Company," and Samuel Johnson could shut himself up for eight consecutive evenings and produce "Rasselas," to earn the money for his mother's funeral expenses.

It may safely be said that literary productiveness comes of all conditions of life and thought except from idleness. The leisure of the dilettante is fatal. The thoughts of an idler are almost never good, and probably nothing worth the labor of production was ever elaborated in such a time as the author had nothing to do but chew the end of his pen and wait for an inspiration. An amendment might be offered about the things that come to them that wait. An inspiration never comes to them. "Busyness" is the salvation and hope of the writer,— a very considerable pressure of "busyness," with a fair proportion of time for meditation and the adjustment of balance between *affairs* and *thought*. There is a poor peasant woman in Germany, a toiler in the fields, a carer for cattle, a daughter of generations of labor, and mother of generations of like kind. At night she sits in the candle light in her poor hut and writes verses which all the civilized world is reading to-day. She is untutored, unread, but her poetry shames the men of many universities and many learned degrees. The first master of English fiction wrote his novels at night and set them up in type at odd moments, in his printing office. This is the way literature comes. There is no golden road, there is no golden rule. Anybody can try, anybody can get a hearing. Perhaps no other field has so much room and so warm welcome for newcomers, no other profession has members so kindly to the rising struggler, no other work has sweeter rewards.

CLARA E. LAUGHLIN.

TECHNICAL SCHOOLS IN AMERICA

NEAR the close of the first quarter of the present century was established the first technical school in America which was independent of government aid. Now there are some three hundred and fifty such schools, including courses in colleges and universities. It was in 1824 that Stephen Van Rensselaer established a scientific school at Troy, New York, called the "Rensselaer School," which had no dead or foreign language in its three years' course of instruction, but whose studies were chiefly those of geology, zoölogy, chemistry, mineralogy, botany and mathematics. It was without endowment, except that Mr. Van Rensselaer made himself personally responsible for the expenses. Now many millions are invested in technical instruction. In 1826 there were twenty-five students registered in the first Rensselaer catalogue, while now there are over twenty thousand students in the various scientific and technical schools of the country. In 1826 the Rensselaer School graduated nine men with the degree of bachelor of science, B. S. (r. s.),— the letters *r. s.* implying that the degree was conferred by the Rensselaer School. In 1879 there were reported to be 2,340 graduates in science and engineering in this country, and the indication is that the number is considerable larger to-day. The first degree in engineering, that of civil-engineering (C. E.), was conferred in 1835 by the Rensselaer Institute (as then called) upon four of its graduates; now there are about one thousand graduates yearly in this country in engineering — civil, mechanical, mining, electrical. Then there were no manual-labor train-

ing-schools, with few suitable technical text-books; now there are many of both.

This splendid growth of less than three quarters of a century is not the result of transplanting a foreign system, but rather that of the germination of a seed impregnated with original ideas, planted in the fertile soil of American possibilities, and its aftergrowth shaped by local conditions and general environment. It has been without a central guiding hand, and free from governmental restrictions, except, in a very mild degree, in those schools receiving the benefit of the land grant. Some schools have a single course of study, while others have several parallel courses; some develop certain subjects much more largely than others. While there has resulted great variety in details, there has been unity in making the applied sciences the prominent subjects in the curriculum.

At the World's Congress of Engineering (1893) there arose, quite spontaneously, a "Society for the Promotion of Engineering Education," for the purpose of securing papers and discussions upon subjects pertaining to engineering-instruction. Its members include nearly all the instructors in technical schools in the United States, a few in foreign lands, and some others interested in such education. It has published three volumes of transactions, and has already had an apparently good effect upon existing schools. Facts have been collated, and classifications may follow. What these schools ought to be, or were destined to be, could not be predetermined; but now, that they exist in large numbers, and in great variety, they may, by mutual comparisons, not only be of benefit to each other, but may possibly solve problems which otherwise would remain merely speculative theories. They may be likened to the physicist who, ignorant of the law he desires to discover, makes numerous experiments, plots the results, and then makes deductions. Some of the questions which have arisen are the amount and character of laboratory, shop, and field work, the place and amount of culture-studies, the degrees to be conferred, and the nature of the technical studies.

The Rensselaer Polytechnic Institute made its impress upon the methods of technical instruction, which has been lasting, especially in what we may call "the laboratory method." Under the old system the student was simply a spectator of the experiments made by the instructor; under the "new," the student himself makes experiments. In the early years of this system the student was required to lecture to his fellow-classmates, but as the classes grew in size, this was abandoned, but the execution of experiments was retained.

This system, though not necessarily original with the institute, was such a marked departure from methods then existing in this country that it had all the effect of originality and invention. The laboratory was not confined to physics, nor to the walls of the lecture-room, but was extended to all subjects involving physical objects, and to all "outdoors." Thus in the study of geology and botany, the student made observations upon hills, mountains and fields, took excursions and selected specimens; in chemistry he analyzed bodies; in astronomy secured his data from observations; in surveying used the instruments in the field; in the shop handled the tools; in electricity he runs the dynamo and measures electrical quantities; shops and factories are made objects of observation and study; and all these under the direction of an instructor. The Centennial Exposition (1876) and the Columbian Exposition (1893) were great object-lessons for the student.

In the "shop," two systems have grown up. In one, the students make machines, or parts of machines; in the other, they do "exercises." In the former, they work under and by the side of skilled mechanics, producing working and salable machines; in the latter, the file, anvil, planer, lathe and other tools are used in making pieces of prescribed form and finish, but of no commercial value when done. Both have their advantages and disadvantages, and the "survival of the fittest" will determine which is better as a mode of instruction in a college course. At the present time by far the larger number adopt the "exercise" system. When shops were first attached to the schools, attempts were made to produce tools and machines at a profit, or, at least, to defray some of the shop expenses; but experience quickly proved this to be impracticable. Even if some students do work of commercial

value, the great body of them, even if unpaid, are an expense to the "shop." The machines cost more than if made in a factory, and those who adhere to the system consider instruction in "shop work" the most efficient way, even if the resultant expense is as great. The "shop" in a school is essentially a laboratory, — a place to learn "how." The Worcester Polytechnic School is typical of the "tool-producing" system, and Stevens Institute of Technology, Hoboken, N. J., of the "exercise" system.

The spirit pervading the school and manufactory are distinct, if not antagonistic. The student pays for learning; the man gets pay for work. In the former, knowledge is acquired; in the latter, money. The former is "dead-work;" the latter, "pay-work." Like opening a mine or erecting a factory, a wise expenditure upon the "dead-work" will have an influence upon the profits of the "pay-work." The chief mission of the school is to teach "principles" and modes of investigation. Handicraft and expertness belong to the trade; empiricism to the "craft," not to the "profession." The school should not aim to do what the factory does; if the school does not give what the factory does not, it is a failure.

In the expenditure of funds there have been unavoidable errors, but they have not been gross or numerous. It seems to have been generally understood that brains were more valuable than architecture. The Rensselaer School was housed in a building inferior to many a rich man's stable. Brick and mortar do not make a college, but students and instructors must be comfortably sheltered; machinery and tools do not make an engineer, but they are desirable for instruction; models and apparatus do not make a philosopher, but are necessary for investigation. The greatest discoveries have been made with indifferent appliances. Chemistry was born and nursed in a kitchen with tobacco-pipes. Electricity first "sparked" from a philosopher's kite. A soap bubble reveals mysteries in optics. Laboratories filled with appliances, and fancy cabinets filled with models, make a fine show, but are useless for instruction without the living teacher. There is no substitute for him. His inspiration is often the most valuable part of an education. Supply the brains, and the illustrations will take care of themselves. Still, illustrations, whether with models made with artistic skill or simply extemporized, are often of unspeakable value. The Aristotelian philosophers might cavil till doomsday at Galileo's lectures, but to witness the falling of the balls from the tower of Pisa was to be convinced. The effects flowing from this simple experiment are unmeasured. It marks the dividing line between an old and venerated system and the "new," and is the basis of the "scientific method," which is, "try it, and see how it works." Visionary schemes — perpetual motion and the like — cannot long survive this crucial test, and may be applied to economic questions in the body politic.

The early schools, such as the Rensselaer School, the Dartmouth Scientific School, the Yale Scientific School, and others, restricted themselves almost exclusively to scientific subjects for educational purposes, regardless of utilitarian ends, but later on modern languages were introduced — and some of these remain to the present; but these schools formed such a natural basis for engineering-instruction that many were changed to engineering-schools, or engineering courses were added. It is not claimed that there was a demand upon the schools for engineers. The supply, limited as it was, was filled by graduates from the Military Academy at West Point. It was a process of creating a demand by educators and scholastic philanthropists who believed in the advantage of technically trained men, and the success of the graduates and the growth of the schools have confirmed the wisdom of these advanced thinkers.

Of the professional schools, those of civil-engineering lead. From 1835 to 1860 the graduates in civil-engineering were less than forty in one year, falling to twenty-five in 1864, then rising to nearly 400 in 1895. After 1860, schools for mining, the mechanic arts, agriculture, architecture and manual labor training came rapidly into existence. Private benefactions amounting to millions of dollars were bestowed upon them, and the great Congressional land grant of 1862 for schools of agriculture and the mechanic arts gave to them an independence and impetus which has been, and will long continue to be, felt. More

recently, some institutions have conferred the degree of electrical engineering (E. E.), while others have incorporated the study of electricity into their other courses. The graduates in mining have not at any time been large; they have fluctuated between thirty and sixty between the years 1876 and 1892; those in civil-engineering also fluctuated considerably, rising from twenty-five in 1864 to 215 in 1875, then falling to 140 in 1882, since which there has been, on the whole, a gradual increase to 375. In mechanical-engineering, the numbers at first were not only small, but the increase was also small, and in 1880 there were only forty-five graduates, but since that date the increase has been rapid, passing the total number in civil-engineering in 1891, and in 1892 showing 435 graduates. Statistics from a few of the larger schools indicate a considerable increase since 1892.

During the three years succeeding 1889 the increase was almost exactly seventy-five per year. The abnormal growth of railroads and the systematic construction of bridges* after 1864 (near the close of the Civil War) made a demand for civil engineers, and the schools already organized were more largely patronized and grew rapidly until 1875, after which business and schools shrunk in volume until 1882, after which the sphere of activity widened, numerous smaller fields opening, and the schools again grew in numbers, and apparently more permanent. The fluctuations in school-attendance are not immediately influenced by business depression: as a rule, they follow and are not contemporary with a period of hard times. Some saw a great opening for instruction in the principles of machinery and the mechanic arts. The country was full of machinery, much of which was of the highest grade; the apprentice system in the shops was weakening, and there were no schools devoted to the science. The subject was attractive, and when schools were opened students flocked to their doors.

Much that was included in civil-engineering is mechanical. The locomotive, pumps, running-gear, surveying-instruments, the construction of bridges, the manufacture of the tools used by workmen, the manufacture of the rails,—are all mechanical. Similarly in regard to mining, nearly all the equipments are mechanical; so with electricity; work in agriculture is largely mechanical; buildings are erected by machinery; clothes, wagons, harness, nails, bolts, farmers' fences, etc., are all made by machinery. Wherever work is done, machines force their way,—in the house, the field, the mines, in transportation, and in places too numerous to mention. It robs men of their occupations, but opens up new fields; it even robs them of trades, but offers new ones. The old trades are all affected by it, and about the only one that appears to be permanent is the designing and making of machines with which to make other machines. Mechanical operations require superintendents. It seems natural, therefore, that schools which instruct in the mechanic arts should in time outstrip, in numbers, those of the other "technics."

Some schools confer a professional degree (C. E., M. E., etc.) at the end of a four-year course, while others give a bachelor's degree and leave the profession to be earned by additional study, or by professional work. The consensus of opinion among many educators is decidedly in favor of the bachelor's degree. At best, any degree or certificate given at graduation is held to imply only that one has passed a prescribed course of study, and not until he has shown both knowledge and ability to do creative work is he an engineer. The environment of the engineering-schools and the courses of study have made it necessary to devote the first year or more to non-technical studies. It would probably be a great gain, both in culture and professional attainment, if professional studies were confined to two or three years, and all other studies pursued in other schools as preparatory to the professional.

When technical schools began to attract attention, in the sixties or earlier, there was much discussion among educators in regard to the educational qualities of the new experiment. In this the advocates of the "new education" were at a great disadvantage, for the old educators were in possession of the field; they had the chairs of learning, they had tradition and prestige, and eminent men were living witnesses of the "old."

*The first iron bridge in this country was erected in 1840; now it is estimated that the aggregate length of iron bridges and iron viaducts exceeds fifteen hundred miles.

Moreover, at first the courses of the "new" were for three years, and too frequently the preparation was too meagre, and when connected with the old colleges the course of instruction consisted largely of the non-classical studies of the old courses, and the classes sometimes were presided over by non-sympathetic instructors. But the new education had a firm hold upon the public, and the demand for it was so strong that it could not be ignored, and so it was patronized and tolerated by many who were unfriendly to it. Opposition and criticism only served to point out defects to be remedied; the courses were extended to four years, with independent classes and instructors; the requirements for admission raised, — the courses of study often severe; the students, generally hungry for knowledge, made great improvement, and in time graduates filled positions of trust and responsibility with credit and honor to themselves. Then agitation ceased. The victory had been won by the results achieved.

The advocates of the "new" were no longer apologists for the system, but, as aggressors, claimed that the subjects and methods of the new education were better adapted to develop integrity of character and true manhood, since they require a constant inquiry after truth, and for the sake of truth only. Nearly all the abstract sciences have been introduced into the classical courses, so that they have become quite scientific. Indeed, language has a science, so that in the broadest sense they may be truly scientific. Even theology has modified its teachings. Instead of an extraordinary and unnecessary exhibition of Almighty power in creating stratified rocks, fossils and petrifaction in an hour, there is substituted the economic operations of law acting through ages. Science has broadened the mind, reaching in one direction toward the infinitely great, in the other toward the infinitely small. The material benefits resulting from the applications of science, producing wealth, comforts, luxuries, conveniences, pleasures, is an attractive subject for the economist.

Fear has been expressed that these professional schools would graduate too many; that they would fill the country with pretentious engineers for whom there is no place. Such a condition cannot be determined beforehand, and can be settled only by trial. New fields open, the hap-hazard "rule-of-thumb" methods gave way to the systematic methods of the engineer; the ignorant superintendent is displaced by an educated one, technical journalism and teaching absorb some, consulting-engineering others, while many seek a technical education as a preparation for business life or for other professions, and not a few will be mechanical workmen, more intelligent for the drill they have had. There is no danger of educating too many sensible men. Education makes true men humble and serviceable, and if the indolent, the vain, the pretentious, are graduated, they will find a lower level in the world. Shake a sieve filled with sand and gravel and the small grains fall through, the lumps remain, the larger on top. The world is a pitiless screen. The schools cast in their products and abide the result.

DE VOLSON WOOD.

THE MOULDING INFLUENCES OF KINDNESS AND GOOD-BREEDING

WE look into the face of childhood, reading many things — as many things puzzling, pleasant and painful, as there are faces. To quote the words of an eminent physician: "You can mould the bumps on a child's head to suit yourself," and, continuing, "I don't think the disposition has anything to do with it;" — yet the moulding of character, through education, *has* much to do with fashioning and developing the disposition. Children whose mothers or guardians delight in making the little ones happy have their reward in the increased beauty of their charges, a beauty which is often independent of form or feature — or even of coloring. Nor is the disposition the least to be benefited, but often derives the greatest improve-

ment from association with congenial companions and pleasant surroundings. Kindness, axiomatically, begets kindness. Truth is the strongest advocate for truth, and, in advanced youth, perfect trust, in a properly bred young man or woman, is seldom betrayed.

Yet how many guardians of youth continue to prate of "in-bred sin," whenever and wherever there is a spontaneous expression of joyous physical, mental, or spiritual well-being — niggardly souls, that misinterpret sinful thoughts in a baby's smile, a young girl's laugh, or a boy's exuberant activity — and these, in turn, develop suspicious thoughts, distrustful motives, and deceitful actions; — where, a wiser course would have called into being an harmonious soul, trustful and trustworthy.

A healthy physique is generally the foundation of a healthy morality. That course of training, exercise, education, and care, which develops the most apparent physical perfection, will also develop a corresponding amount of character. A rosy, happy youth, instinct with life and activity, with open, candid eyes looking out with soulful splendor, smiling guileless joy in serene expectation of an equally guileless reception, is one of the sweetest things to contemplate. Nor is this attribute confined to youth alone. You will see it sometimes in the faces of the servants employed in the families of our best-bred people, — who, having the means to pay for it, require the best service and employ such as are most fitted to render it, — giving them comfortable quarters, and wholesome fare to promote the physical condition their duties demand, stipulating to pay therefore a due equivalent, which is generously and cheerfully fulfilled. In turn, the recipients render with cheerful alacrity the services for which they are employed — the household throughout maintaining the harmonious balance of peacefulness and justice. On the other hand, often, some pretentious under-bred *parvenue* will aspire to emulate the picture described, and open "an establishment," — furnishing with costly and careless extravagance, the drawing-rooms and others most *en evidence*, neglecting the necessities required for the proper fulfilling of the domestic functions; engaging a corps of servitors, with a total disregard of fitness, demanding attendance both in and out of season — a repetition of the Egyptian code of "bricks without straw." Then mark the difference of expression in the faces of the dependents of those two households and compare the characters of the individuals after a given lapse of time, and the physiologist and sociologist will have an interesting field for thought. Then again, see how the influence of one cheerful, kindly presence will brighten the lives of all who come within the radius of his or her vision, developing the character of the menial, even, by increasing that menial's self-respect and self-dependence.

On the other hand, note the niggardliness of the suspicious and worldly philanthropist, whose reputation is a hollow mockery, luring to destruction the youthful aspirant who confides in him, seeking reassurance, perhaps, — hopeful, honest, and therefore confident, — needing influence and timely assistance to promote the growing product, which is to lead to a life of prosperous usefulness, — to be frozen with a cold and calculating eye, checked with a sneering voice, until an undercurrent sets in, which wrecks the career of honest endeavor, and embitters the soul of the ambitious aspirant forever.

The experience of two whom the writer knew will illustrate best the motive of this paper. One was the motherless daughter of an artisan, who refused to re-marry but hired a home-tyrant to bring up his children. The promise of beauty in this child was early discernible, but as time advanced the promise was not fulfilled. Her form was dwarfed and prematurely aged, her shoulders drooped, as in advanced maturity, her joints enlarged, and her face became sharpened and sallow, with a corresponding mental and moral condition, — as one commented, — "Nature was starved." At about the age of twenty deliverance from hired thraldom came. An observant friend, of noble nature, assumed the rôle of mentor, and the work of remoulding began. The girl became the mistress of her father's home, and endeavored to redeem her own misguided youth, regained her impaired health, and redeveloped her mental and moral faculties. Freedom from restraint, and the kindness of friends made her happy. Proper recreation, alternating with home duties and studies, counterbalanced any tend-

ency to morbidness. Timely hints from her esteemed mentor were acted upon, while mental courses alternated courses in physical culture, dancing, with music, a course of classical reading, with a series of well-chosen plays at the theatres, and, at the appointed season, outdoor exercises were properly indulged in, until at the age of thirty-seven she *is*, not a beautiful, but an accomplished and thoroughly well-bred, graceful, and elegant woman. Bright and engaging, *petite* and round, combining womanly balance with the vivacity of eighteen, and looking not a day older than twenty-five; a perfect reincarnation of character developed by happiness.

The other was a woman who, though superior mentally and socially to the situation, was compelled through expediency to accept occupation as a home dressmaker in families; having a weary time, until some kind *genie* opened the way to a well-disposed set of wealthy, well-bred patrons, who smiled upon her endeavors, which developed a power undreamed of in her, even by herself, and she became "the fashion" in an exclusive quarter and flourished accordingly.

On occasionally visiting friends of olden times, one was wont to say, "No need to ask how are you?—your face proclaims that it is well with you," or "With whom are you employed, for again your face is witness that you are basking in the presence of greatness." And now, though prosperity is curtailed, the character then developed is retained, and the serene nobility which rests upon her brow compels the respect and attention which is seldom given to any but those possessing not only name but place; another proof of the power of good-breeding.

Though this one of whom I write is at the present moment ill from contact with a brutalized nature, whose influence she was striving to secure in order to promote a given object, her refined delicacy having offended the stronger, rougher element, who retaliated with overbearing insolence, and her sensitive soul recoiled, and heart and nerves gave way; it is hoped,—but temporarily. To quote an authority, "It is well known that certain conditions of body and mind produce specific nerve effects. For instance, happy sensations produce healthy nerve currents, while *per contra*, disagreeable sensations have a decidedly toxic influence on nerve ganglia."

Environment, I may add, is responsible for much that is desirable or undesirable in the development of character, and the maintaining of a healthy, mental and moral, as well as physical, equilibrium; nor are animals, and even plants, exempt from the influence of immediate surroundings. I have known a dog, who had a kind but indifferent master, to become morose and intractable simply from being ignored. On being consigned to the care of a considerate and sympathetic lover of animals, his nature changed, apparently in a few days, becoming amiable and caressing; joyous barks took the place of surly snarls, and he looked out with happy, shining eyes—a perfect specimen of healthy animal life, produced by kindness.

It is well known also that plants thrive in the sunshine, with an appropriate supply of water; though sunshine and water do not produce the required result if the plants are disturbed or trodden upon, or even frequently brushed against, or roughly handled; they must be planted in proper soil, lighted, tended, watered and also, *let alone*.

Of human plants it may be said: "Plant yourself if you want to grow." Preserve your individuality, also, by maintaining your privacy, and, like an ancient philosopher who lived in a tub, let not even a king obscure your sunshine.

LAURENSTINE YORKE.

The wife of the late Sir Richard Burton, the famous traveller, has, in a volume recently issued, entitled "The Romance of Isabel, Lady Burton," set down a series of Rules for a Wife, to govern her conduct through life. Here are some extracts from her code: 1. Let your husband find in you a companion, friend and adviser, and *confidante*, that he may miss nothing at home. 2. Be a careful nurse when he is ailing, that he may never be in low spirits about his health without a serious cause. 3. Make his home snug. If it be ever so small and poor, there can always be a certain *chic* about it. 4. Improve and educate yourself in every way, that you may enter into his pursuits and keep pace with the times. 5. Do not try to hide your affection for him, but let him see and feel it in every action. Keep up the honeymoon romance, whether at home or in the desert. Do not make the mistake of neglecting your personal appearance, but try to look well and dress well to please his eye. Take an interest in everything that interests him. To be companionable a woman must learn what interests her husband; and if it is only planting turnips, she must try to understand turnips.

THE NEGRO AS A SLAVE AND A FREEMAN:

SECOND PAPER—AS A FREEMAN*

NO nation ever recovered so quickly from so great a shock as did the United States from the effects of the War of the Rebellion. These effects were felt most in the South. It is true that the North lost about 350,000 able-bodied men, and a great many more were rendered incapable of doing after-work. It is true that it cost several thousand million dollars, but the expense was not an unmixed evil for it greatly stimulated industry. In the South conditions were different. That section lost a great many men in the field and had many wounded or rendered more or less useless by ill-health. In the matter of expense it lost more heavily than the North. All of its war-debt was declared void. A great part of the loss fell on foreign bondholders, but the people of the South had given their money and material freely and all this became a total loss, while they had to help to pay the debt of the Union to suppress the rebellion. A great part of the Southern territory was at one time or another occupied by armies and the devastation was great, particularly in Virginia, Tennessee, and the territory just south of the latter State. But the greatest evil the South encountered was from a total upheaval of its social and economical systems.

Upheavals in the South

Bad as slavery was from a moral point of view, and undesirable as it was from an economical standpoint, the change was so sudden that it upset business and society to an extent that can hardly be appreciated now. Undesirable as slavery was from any standpoint, no one can say that it was got rid of in the way that would have been best for all concerned under ordinary circumstances. Emancipation by presidential proclamation in the rebellious States was a war measure. The success of the Union arms soon caused the whole fabric of slavery to fall. In the border States that had not seceded the shock was not so great as elsewhere. In Kentucky, Missouri, and Maryland where slavery had been a mild institution the change was easily effected, in most cases by the former owner simply hiring his former slaves. In many cases even in these States the late masters had joined the Confederacy and lost their lives or fortunes, or both. In other cases the negro was so excited over freedom that he refused to work for his former master or for any one else, for a long time expecting the government to take care of him. Many were anxious to own land and bought "patches" of poor ground at high prices, for which they were often unable to pay.

In the Far South

In the far South the conditions were different. Many of the slaves who stayed faithfully at home for a time with their mistresses, looking after the crops, ran away and became camp-followers. Hundreds of thousands of them were in the wake of the armies. Many did effective manual labor. Many enlisted in the latter part of the war, and here the intoxication of freedom was greatest. When the war was over and the master came home to his plantation that had not been tilled for two seasons, or had been despoiled by one or the other of the armies and perhaps the buildings burned, a desperate situation confronted him. In the first place he had no money. The Confederate scrip was worthless. Coin had long left the country, and he had no credit, for no one would give it. The only currency in the United States was National bank notes and greenbacks. There were scarcely any National banks in the South, and it took time for greenbacks to get down there, for the North soon felt the stringency caused by extending its currency over a third more territory than it had previously occupied. About the only money for a time in the whole South came from the sale of cotton, which commanded a large price, and of which there was a fair supply on hand. Unfortunately much of this had passed out of the hands of the owners and had either been confiscated or bought up by speculators.

*See First Paper—"The Negro as a Slave"—in SELF CULTURE for June last.—Ed.

The Terrible Year after the War

The year of 1865 was a terrible one, but the people lived through it, and they found one advantage in the fact that the necessities of war had driven them to a diversity in crops which they had not known before the war began. Northern capital soon poured South, but not always in the most desirable way. The carpet-bag legislatures issued hundreds of millions of bonds, which did not, as we have already seen, bring either money into circulation in all cases, nor did it bring about the development of the enterprises which were expected to do so much for the section. There was a gang of speculators in every State, and though they did help in some ways, they were not in the main there for the real development of the South.

Forty Acres and a Mule

The negro was in a sad plight at the start. A great many of them had left their former homes. Many of the masters were dead and many others were unable to help their former slaves no matter how much they would have liked to do so. Hundreds of men went through the South selling the negroes four painted posts for a few dollars, telling them that these were sent by the government and that they could have any forty acres that they would stake out with them, and that a mule would soon follow. Many of the masters were vindictive and disgusted over the new situation, and there was far from the best feeling all round, although in the main it must be said that the masters were willing to do the best they could.

The negro had no sooner recovered from the shock of freedom and the disappointment about the forty acres and a mule myth, than the troubles about Reconstruction came on. In these the negro was prominent from the start. In order to protect themselves the existing legislatures passed many laws which bore hard on the negro, particularly in regard to vagrancy. There was a system devised by which the negro was to be forced to work, and in many cases this amounted to actual slavery. It cannot be said that these laws were in all respects well-conceived or fairly executed, though in many cases they were copied from New England laws, which defined the relations between master and apprentice, but which had now become obsolete.

The Freedmen's Bureau

The Freedmen's Bureau was established to act as mediator between the late masters and the freed negroes and to see that all were treated justly. These bureau stations were largely in charge of army officers, but in many cases unscrupulous men got appointed, to make money out of their positions. There were some men who ought to have been in the penitentiary, and there were some honest, efficient men who were of great service. After all the scandals of the bureau are examined (and there were enough of them), it still remains that, on the whole, the system was a good one for the time being. Many whites were glad of so efficient a power to restrain the ignorant men who had so lately been their slaves. Slowly the country emerged from the desolation of war and much progress might have been made, when the Fifteenth Amendment was passed making the negro a citizen with full civic rights.

The Fifteenth Amendment

This was a great blow to the South and was the greatest injury ever inflicted upon the negro outside of slavery. The negro was not fitted for citizenship. He was given no preparation. Suddenly, more than four millions of ignorant men were made citizens and then told that they had the power and must look out for themselves. The North abandoned the negro after passing a few laws which were a great injury to him. So long as the troops were kept in the South, the negroes voted and elected their own people to many of the offices. There is no denying that in many cases there were ignorant, incompetent and vicious negroes put in high places, though in not a few instances they made competent officials.

It could not be expected, however, that this state of affairs could long exist. Gradually the whites were restored to their civil rights and they resented being controlled by their former slaves. This is a characteristic of the Anglo-Saxon. He will not consent to be ruled by any but his own race. Look at all the colonies Great Britain ever established and this will be seen to be the universal rule. The French easily amalgamate

with native races, but the Anglo-Saxon does not. As a rule he is not a hard task-master. His ideas of justice may be extreme, but in general he has respects for the rights of others so long as he can control events. The Southerner would not be ruled by negroes. No matter if the negroes were six to one in a section, they soon found out that there was a greater power than that of numbers and this power was intelligence. The whites soon gained complete political control of the South and they did it by fair means or foul as was easiest. The whites do not deny it. They openly avow it. While as an abstract proposition this was not proper, let every man put it to himself and judge what he would have done under the same circumstances. Intelligence has always ruled a civilized community and always will.

The Negro gives up Politics

In the course of years the negro bowed to the inevitable, and as a political factor he counts for little except in a few border States and in isolated communities. One thing is noteworthy. The white men have been willing in many cases to allow the negro to hold representative offices but not executive ones. In nearly every Southern State there are one or more colored representatives in the Legislature, and it is much more common to find them in city councils, where they are often used as a basis for political deals.

Of recent years the split in the Democracy of the South, caused by the interjection of the Populists into politics, has made the negro more important as a political factor. In most of the States there are laws making an educational or property test for voting well nigh prohibitive to the negro. Laws of this kind properly drawn and fairly executed are not objectionable, but these are not always easily secured. The introduction of the Australian ballot system has eliminated a great many of the former voters, but as the rising generation is learning to read and to accumulate property, it will in time become an important factor in politics, and will not meet with a like opposition. It is a fact that the white men who have gone to the South since the war have been the bitterest opponents of the negro in politics. They have seen only the worst side of his character. They have not seen, as has the native white man, that the negro is capable of many things, but needs direction. It cannot be claimed, however, that he has been well-directed in all cases.

The Negro Injured by Civil Rights

Of course there was a terrible outburst of rage when the negro was made a voter. It seemed to the Southern whites that social equality would next be forced upon them, and this they would not stand. Then the persecution of the negro became greatest. Men formerly well-disposed toward the negro, when they found that their former slaves could vote, while they could not, became embittered, and in the antagonisms that followed, the negro was the greatest sufferer. He lost many chances that he might have had if he had been content to work gradually into full civil rights.

In the early constitutional conventions in the South there were many earnest, upright men of sound views who urged upon the negroes, who sometimes formed a majority of the delegates, that they use discretion and adopt a system by which they might gradually become citizens as they gained intelligence, education and property. It was all in vain. The negroes could not refuse what seemed to them a priceless gain, but which proved to be a great drawback. In former articles it has been pointed out that the Fifteenth Amendment was never passed by the full, free and fair consent of the proper number of States, but was forced on the South as a Reconstruction measure.

Was the Fifteenth Amendment Constitutional?

It is strange that the validity of the Fifteenth Amendment was never attacked. In the famous Texas bond cases, the Supreme Court decided that there never had been secession, that no State had ever left, or ever could leave, the Union. In consequence many of the Reconstruction measures were clearly unconstitutional, and particularly those which forced legislatures to ratify the Fourteenth and Fifteenth Amendments before they could be recognized as in the Union, which they had never left. If the negro had not been injected into politics he would have been spared a great deal of suffering and would have been enabled to get along much faster. It practically threw him on his own re-

sources, which were of the most limited character, and how he has managed to accomplish so much is a surprise to everyone who has looked over the situation. But being in politics he became the bone over which the two great parties contended.

A Long-sought Point Gained There is one point which I do not remember to have ever seen stated that seems to me significant. In the Constitutional Convention of 1787 the Southern States insisted that the negro should be counted a man without a vote, and after a bitter struggle he was finally rated as three-fifths of a man without a vote. It was this compromise that led to many of the quarrels over slavery. The North regretted that he was represented at all, and the South regretted that it had ever consented to let him be cut down to three-fifths. We all know that slavery was the cause of the Civil War. Many persons felicitate themselves that the war made a citizen of the negro. In a political way the result has simply been that the white people have gained their original contention of 1787, for the negro is now counted as a full man, but has no vote worth speaking about, at least he is not in any Southern State a deciding factor. The war gained for the slave the Northern contention that he should be free, but the South has gained its end of the contention.

Educating the Negro One of the greatest problems at the end of the war was that of educating the negro. It was seen by people in the North, who did not believe that there was any viciousness in the negro character, or if there were that it was only right for him to get even for past brutalities, that he was ignorant and that he must be educated. Before the war was over the Freedmen's Bureau established some schools in the South and many more after the war was ended. Church organizations started schools in many sections of the South and did much good, though the school teachers were not always practical in their ideas, and there was too much of an idea prevalent that the negroes should have everything, and that the whites were their natural enemies, a feeling for which the white people were often responsible. But all these efforts were feeble compared with the work that was to be done. The States were poor, and after their experience with the carpet-baggers, were poorer still. The South never has understood the value of education even for the whites. Schools after the war were few, the teachers often incompetent and poorly paid, and only a small portion of the children had more than the most elementary education; while a very large portion had none whatever. This was, of course, in part due to the disturbed industrial and financial conditions, but it was long ere the South took up the question of education in earnest, and to this day it is far behind the rest of the country. The condition of the colored children was pitiable. For a long time there were no public schools for them, and when the custom began of giving them separate schools, there was a very small sum set apart for the work. At present, conditions are greatly improved.

Northern Education of the Negro For many years the work of educating the negroes was largely carried on by charitable institutions in the North. In all the States schools were established for the education of teachers from among the negroes, and in many sections these were received with great disfavor. The Southern people feared that back of it all there was the idea of social equality. This was partly because most of the teachers were missionaries who came South with a great interest in the negro. They soon found that in most places they were socially ostracized, and this made their sympathy for the negroes all the greater. For many years little was attempted except elementary education; then colleges were established, and a lot of colored people of both sexes got a higher education. These were the source of supply for the better grade of colored schools established by the States or by private gifts. It was soon found, however, that these were not doing all the work that was needed.

Industrial Education There were many who could not seem to progress more than so far; there were many more who were not fitted for teaching or for professional pursuits of any kind. Something more was needed, and Hamp-

ton Institute was the outgrowth of the feeling that the negro needed industrial education more than anything else. He was sure to be the laborer of the South, and it was seen that he might easily become the mechanic of his section. The Hampton school was therefore turned largely into an industrial school, although the normal work was continued. This was not the first school established for the colored people.

The first college in the South attended by the colored people was Berea College, in Kentucky. I trust I may be permitted to give a slight personal experience. Berea College was founded by my father, before the war, for the white students of the Cumberland mountain section who were without facilities for anything but the most meagre education. It prospered, but it so happened that my father was a Northern man, a graduate of Oberlin College, which was the most hated institution in the country by the Southern people. After the John Brown raid, the people in Madison county, the oldest in the State, and one of the wealthiest, took it into their heads that my father was one of Brown's associates. He was driven with his family from the State and the school was broken up.

After the war my father and his associates returned and reopened the college, and it became again prosperous, as it furnished the best facilities for an education in all that section. My father and his associates, being Northern men and Union men, were well-disposed to give the negro an education if he wanted it. They determined that if any colored youth applied to enter school they would be received, although they knew that the consequences would be serious. I well remember one day in the winter of 1865–6 a diminutive negro entered the school room during chapel exercises and asked to be allowed to go to school. Being asked his name, he replied "Napoleon Bonaparte." The humor of the thing struck the teachers, but he was told he could come. Immediately, nearly all the scholars rushed out of the building and fled as if pursued by the plague. I think some of them are running yet, as they never came back. Most of the students returned, however, and colored students of both sexes have attended ever since and the college has grown steadily, having now some six hundred students yearly. It is the only institution where the two races go to school in anything like equal numbers. It has had some troubles over the question of unwise desires by some for social equality, but this has caused less friction than might be supposed. The college devotes itself to education, and in the natural run of things the races flock by themselves socially, though there is the best of feeling generally between them.

Social Equality Impossible

Social equality never will come, and is not to be desired; but the negro is entitled to all the chances that a white man has and to all the protection that the laws give. If only the unreasonable fear that the Southern people have of social equality or negro domination could be eliminated, there would be no trouble. Mere education will not bring about the desired end. The negro needs more than this. The white men have behind them centuries of education and culture, and their progress has been slow enough even with the best advantages the world could afford. The negro has behind him centuries of barbarism and slavery, and that he has accomplished so much in the last thirty years is no less than marvellous.

The Negro and the White Man

In the last few years the industrial problem has been taken up much more seriously. While there has been an immense amount of good done for the negro by people in in the North, it has in many cases been misdirected energy. The Northern people expected too much and were not in sympathy with the Southern people among whom the negroes lived. Now it must be apparent to all that the negro is destined to remain in the South and that his future depends upon his relations with the white people. For a long time they were fiercely antagonistic, and the negroes were encouraged by very injudicious friends in or from the North into thinking that they might in time be able to lift themselves by their boot-straps. This is dying away and the whites have come to see that under proper conditions the two races can live alongside each other harmoniously and profitably to both.

Booker Washington

A distinct era came with the founding of Tuskegee Institute by Booker Washington, a colored graduate of Hampton, and a man of

remarkable insight and judgment. He is working to elevate the negro on industrial lines. His progress was slow for a long time. It was not until his famous speech at the opening of the Atlanta Exposition that he and his institution came into national notice. That speech was remarkable, however considered. It struck the keynote of the whole situation. His theory that the races could be socially as separate as the fingers of the hand and yet in all that makes for social progress as united as one hand, put the whole question in a nutshell. It awoke the South and it awoke the North. The future prosperity of the negro is along the lines laid down by Mr. Washington. When a colored man is the best blacksmith in a community, he will get the trade. When he is the best farmer he will make the most money. As he grows in intelligence and prosperity he will not only command respect but he will gain power which he can use, and which will not, which cannot, be taken away from him.

A Land Question

In a former paper I said that the negro question was essentially a land question. The old theory that the negro grew much faster in population than the white man has now been disproved by carefully collected statistics. The danger that the negro will before long drive out the whites is fancied only. But he is chained to the soil, and while in mechanics he may take a leading part, yet it is as an agriculturalist that he must look for his prosperity. The South has suffered from the beginning because it has given so little attention to the proper cultivation of crops. The slave never was a proper cultivator. The great plantations were not economically administered. When cotton was the only crop, the soil was exhausted to get as much cotton as possible regardless of the future. There was waste everywhere, so that it is found from the most reliable sources available that even on the best conducted plantations the profits generally did not exceed two per cent. outside of the natural increase of the slaves.

Scientific Farming Needed

As we have noted, the war upset everything, and it was long ere matters began properly to adjust themselves. The adjustment that has taken place is not the proper one. There is little of scientific farming done. Indeed there is too little scientific farming done anywhere. But when we remember how on a small farm in New England, where the soil is sterile, the winters long and conditions most adverse, a man would rear a large family, educate them, and give them all a start in life, it can be seen how much Mother Earth will do for us if we coax her hard enough. In Pennsylvania are to be found perhaps the finest farms in the world. The Pennsylvania farmers' sons who go West and take up land are not the men who are leaders in the Populist party. They till the soil with skill and energy, and many of them have become more than well off. In the South the well-managed farm is the exception. It should be the aim of the negro to gain a farm of his own and cultivate it with all the energy that he put forth when under the lash, and with the added intelligence that new conditions give him.

The Negro not a White Man

The sooner the negro leaves off wishing he were a white man and makes up his mind that it is no disgrace to be a negro and resolves to be the most intelligent negro in his section, the quicker will he make progress. He is destined to live among whites and he must look to the white for help until he is able to help himself. There will be no lack of appreciation on the part of the white man of what he accomplishes. There is a white problem in the South that is almost as serious as the negro question. In natural resources there is no section in the world so rich as the South. It has all that could be asked. The great trouble is that it is too easy to make a living and there are too many who are content with enough to eat and to wear, and this applies to both races. There is a terrible lack of thrift. The Southern people spend too much of their time discussing abstract questions and setting up theories instead of going to work. It is the common complaint of the South that New England has become rich through the system of protection and that this has robbed the South. It does not take a wise man to see how absurd is this charge. There is no section in the country with so few natural resources as New

England. The soil is sterile, the climate is harsh, it is far removed from iron ore, or coal or cotton. Everything that enters into the prosperity of New England comes from somewhere else except thrift. The New England people have been the most energetic people in this country. They have accomplished everything in the face of difficulties and have been deterred by no obstacles. Their great cotton mills are fed by Southern cotton. Their iron factories of all kinds draw supplies from the West. They have learned now to do things well with the least expense. If the South had not been hampered by slavery, and had shown the energy that New England has, it would now be the richest section on the face of the earth. There is no reason why it may not be a generation hence.

The New South

The Southern people are beginning to see this. There is a new South which sees that it is better to work hard and to encourage capital to come within its borders than to waste time on abstract political discussions. It is not a theory of the Constitution that confronts the South. It is an industrial theory and it is not a hard one to solve. The negro is the best adapted for the hard labor of the South and is the more willing worker under stimulus. Formerly that stimulus was given him with a lash. Now it must come from within. When the negro sets out to work out his industrial salvation with energy he will succeed, and he may be surprised to find that before many generations he will be leading in many respects.

The Negro North and South

Finally a word must be said as to the relative condition of the negro in the South and in the North. Theoretically, the negro is better treated in the North. As a matter of fact he is better treated in the South, and it is in the South that he has the best chance for the future. In the South he is to a great extent the mechanic. He works on the scaffold with white bricklayers. Indeed I have seen a colored contractor who hired white men. In the North, in most places, if a colored man were to attempt to work at any trade along side of white men, a strike would result. In the North the negro, as a general thing, is confined to menial occupations. It is true that he is allowed to vote, but that does not benefit him any. Socially, he is as much despised as he ever was in the South, and a great deal more than he is in the South to-day. In the South a negro is allowed to do almost anything else but vote. Between the two the negro is wise who is willing to give up his vote for the time being, knowing well that the white man rules because he has the bulk of the intelligence and wealth. When the negro gets the intelligence and the wealth, he can look out for himself. All the laws that were ever passed by Congress cannot affect the actual status. Every honest man is desirous that as speedily as possible not only the negro, but every other element of our population, should rise in the world. That a great wrong was done the negro by slavery is unquestioned. But every nation in the world has suffered terrible wrongs. The negro was no worse off as a slave than was the Saxon after the Norman Conquest.

Progress comes by Struggle

All the progress in the world has come by the inequalities of the human race. If some were not better equipped in many ways than others, there would be no progress. The negro is far better off to-day than if he were in the wilds of Africa. It is incumbent on the people of this country to give the negro every chance, to extend to him every aid possible, to make the road of progress as easy as possible, but after all, as with everyone else, the result depends on himself. Men cannot be legislated into intelligence or culture any more than they can be legislated into the kingdom of heaven. The progress must largely come from the inside. That the negro, under most trying conditions and against obstacles that seemed almost insurmountable at times, has made more progress than any race similarly situated has ever done before, is the verdict of all students and observers. All the wrongs he has suffered, all the trial he has undergone, are part of an evolutionary process that must ever take place in this world. Social equality will never come in the South, but the time may come when people will look more carefully at the color of a man's linen than they do at the color of his skin, before passing judgment on him.

JOSEPH M. ROGERS.

MODERN FRENCH ART AND ARTISTS:

DELACROIX, INGRES, COROT, MILLET, MEISSONIER

THE supremacy of French art in the present century has been generally recognized. Paris is still the world's emporium of art. Students from all parts of the world flock there to avail themselves of the opportunities of instruction which are so freely offered, and to receive the training they need. Nowhere else is art the subject of so much discussion, whether in clubs and *cafés*, or in journals and reviews. Nowhere else are exhibitions so frequent and so numerous. Besides the two annual Salons now held in the Champs Elysées and the Champ de Mars, the Indépendants or Impressionistes, the Symbolistes, and other groups of artists, hold separate exhibitions in various quarters, and the works of individual masters are constantly to be seen at the galleries of enterprising dealers, who render a real service to the cause of art by collecting the life-work of dead masters, or by introducing new men to the public.

The decoration of public buildings, says a writer in a recent number of the London "Quarterly Review," from which this article is condensed, is another branch of art which flourishes, in a remarkable manner, under the Republic. In this direction, both the French Government and the Municipal Councils of the chief cities have given us an example which we should do well to follow. By their enterprise and liberality, not only the Panthéon, the Hôtel de Ville, the new Sorbonne, and other public buildings in Paris, but the museums of Amiens, of Rouen, and of Lyons, the townhall of Poitiers, and the Palais de Longchamp at Marseilles, have all been adorned with a series of monumental paintings, which we can hardly contemplate without a sense of envy. This public patronage of art is of the highest value. In the first place, it brings great art before the eyes of the people and helps to educate their taste. In the second, it gives the artist an encouragement and a sympathy which are sorely needed and cannot fail to stimulate the production of fine work.

Like the other great artistic movements of the world, the revival of French painting followed a troubled and stormy period of national life. The convulsions of the Revolution, the stirring times of the Empire, produced a burst of patriotic enthusiasm which lingered long in the popular mind. The times were great, and the heart of the nation was deeply stirred. Almost all the most distinguished painters of the age—Ingres, Delacroix, Corot, Rousseau, Millet, Meissonier, Courbet, Manet, and some, such as Degas and Puvis de Chavannes, who are still living, belong to that eventful period, and were born before 1835. It was a dark moment in the annals of art. Winckelmann's fallacies were accepted in cultured circles throughout Europe. According to him, the study of nature merely serves to divert the artist from true beauty of form, and the imitation of the antique is the only path to greatness. Even Goethe, whose genuine love of nature had early revealed itself in "Werther," in pages which seem to foreshadow the landscapes of Corot and Rousseau, changed his tone after his visit to Rome, and declared Greek art to be the only model, and classical subjects the only themes worthy of imitation for the student who seeks to attain perfection. And in France, where the antique style had been adopted in the days of the Grand Monarque, and ancient Rome was the pattern held up before the men of the Revolution and of the Empire, classicism became a hard and rigid tyranny. But at length the moment of deliverance came.

In the Salon of 1819 Géricault exhibited his Raft of "The Medusa," a picture of the raft bearing the survivors of a frigate which had been wrecked, three years before, on the coast of Africa. There was a general burst of indignation at the audacity of the painter who had presumed to consider this incident from contemporary history a fit theme for art, and had actually represented men and women of the present day in natural attitudes and actions. But the condemned picture was hailed with acclamation by Victor Hugo and the other leaders of the new Romantic school in literature, who had risen in protest against what George Sand called "the eunuchism of classi-

cism;" and after the painter's early death at the age of thirty-two, his work was eventually placed in the Louvre. The banner which dropped from Géricault's hand was taken up by his friend and comrade, Eugène Delacroix, whose Massacre of Scio, exhibited in the Salon of 1824, marks an important epoch in French art. The young artist, inspired by the passionate verse of Bryon, had chosen an episode from the Greek war of independence, and represented a group of hungry and hopeless fugitives attacked by Turkish soldiery with all the wealth of color and power of dramatic expression at his command.

The striking personality of Delacroix, and the great influence which he has exerted over French art during the latter half of the century, entitle him to a place among the foremost masters of his age. The range of his art included subjects from Bible story, from classical-mediæval history; episodes from the poems of Dante and Goethe, of Shakespeare and Byron; scenes from Oriental life, Arab horses and Algerian women.

When the Director of Fine Arts objected to the audacity of his Sardanapalus, he replied that the whole world would not prevent him from seeing things in his own way. His pictures were banished from the Salon, and he was driven to support himself by book-illustration. Fortunately his friend Thiers stood by him, and at his suggestion Delacroix was employed to decorate the Chamber of Deputies, and afterwards the Library of the Luxembourg and the ceiling of a hall in the Louvre. It was not, however, until thirty-five of his works were brought together in the Exhibition of 1855 that the painter's true genius was recognized, and he was at length elected a member of the Institute, which for forty years had closed its doors upon him.

The great rival of Delacroix was Ingres, the ablest of David's pupils, who became a member of the Institute in 1825, and lived till the age of eighty-seven, honored as the Nestor of French art and the last of the old Classicists. While he extolled David as the first of modern artists, and followed him in his cult of the antique, Ingres had a profound admiration for the Cinque-cento masters, above all for Raphael, whom he took for his model, and whose motives he frequently borrowed. As Delacroix insisted on color, so in the eyes of Ingres drawing was the whole of art. And it is this fine draughtmanship which has made him the link between the old school and the new, and commands the respect of so modern a master as Degas.

In the midst of the fierce struggle that divided Classicists and Romanticists, a third school sprang up, which, standing half-way between the two, became known by the term *Juste-milieu*, a nickname borrowed from a speech made by Louis Philippe and applied to mediocre work of every description. The leading representatives of this school were Ary Scheffer and Paul Delaroche, both of whom adopted the conventional style of Ingres, tinged with a cheap and melodramatic sentiment which won the suffrages of the middle class and proved a short and easy road to popularity.

Meanwhile, a great success attended the efforts of the Romantic masters in another direction. Decamps and Delacroix had opened the East and founded the school of French Orientalists in which Marilhat and Fromentin were to attain such high distinction. Henceforth Algiers and Morocco became for the Romantic school what Italy had been for the Classic painters, and the followers of Delacroix found a congenial theme in the glowing skies and rich hues of Eastern lands. But there was one class of subject which Romanticists and Classicists alike agreed to banish. Their eyes were closed to their own immediate surroundings, and the actual life of the day never seemed to them worthy of a place in art. Delacroix himself, bold innovator as he was, confessed that all his sympathies were with the past and that the present was hateful to him, while he frankly declared realism to be the antipodes of art. The great battle of the age was fought in another field, and it is the glory of the Fontainebleau landscape-painters that by their means art was brought back face to face with nature.

In the spring of 1824, the year in which Delacroix's Massacre of Scio appeared at the Salon, Constable's Hay Wain, and a few other landscapes by Bonington and Copley Fielding, were exhibited in Paris. These pictures, closely studied from nature, and directly opposed to the academic landscape then in vogue, made a profound impression

upon the young French artists. Delacroix has told us how, after seeing Constable's work, he obtained permission to take down his picture from the walls of the Louvre, where it was already hung, and repainted the whole of the landscape background. Two other ardent young men, Théodore Rousseau and Jules Dupré, were deeply stirred, and went back to the fields and woods with the firm resolve to throw off the yoke of conventional art and paint their own impressions.

And so, from this meeting with English Art, there arose the school of French landscape, which is the finest flower of modern painting. The Salon of 1831 forms another memorable era. That year, Rousseau and Dupré, Corot and Diaz, all exhibited landscapes marked by that close union of natural fact and personal feeling which has won the name *le paysage intime*. In their passion for natural loveliness, 'these men of 1830' explored the banks of the Seine and the immediate neighborhood of Paris in every direction. Corot settled at Ville d'Avray, Dupré at L'Isle Adam, Daubigny spent his days in a barge on the river Oise. Others went further afield, and made excursions into the mountains of Auvergne and Jura, to the plains of Normandy and Picardy, and the coasts of the English Channel. But their favorite sketching-ground was the Forest of Fontainebleau.

Corot, the most unique genius of the group, was closely connected with the Barbizon painters in their early struggles and in their final triumph. But his style is curiously unlike theirs. His career, as M. André Michel justly remarks, may be summed up in a single phrase: 'He came out of the Academy and he opened the way for the Impressionists.' In other words, Corot forms the connecting link between Claude on the one hand and Monet on the other. He was trained in the straitest sect of academic tradition. But the influence of Constable and of the new French School soon made itself felt in his paintings, and by degrees the minute details and dry tones of his early style gave way to a broader and more harmonious treatment. Yet nothing can be further removed from Rousseau's art than Corot's dreams. Rousseau had a passion for noble form, and loved to paint majestic oaks and tall elms. Corot paid little heed to definite outline, and preferred the poplars and willows along the riverside, and the tremulous quiver of aspen leaves on the breeze. Rousseau painted the brilliant hues of the autumn woods under the noonday sun; Corot loved the tender buds of early spring, and the silvery mists of morning and evening. 'To understand my landscapes,' he once told a friend, 'you must wait till the mist rises.' A pure idealist by temperament, but a keen observer of natural fact, the closeness of his early studies enabled him in later years to paint those exquisite landscapes which represent his own feeling for nature rather than the scenery of any actual spot.

Only inferior to Corot and Rousseau in artistic genius was Jules Dupré, who survived both of his friends for many years, and died during the Exhibition of 1889. The majestic aspects of nature, storm and cloud and rushing flood, attracted this fine but unequal artist, and were rendered by him with truth and freedom. Diaz, on the other hand, who had Spanish blood in his veins, revelled in gorgeous hues and hot sunshine, and peopled the shades of Fontainebleau with richly-clad nymphs and odalisques. To these we must add the names of two younger men, — Daubigny, the painter of running water and clear streams, of green meadows and wooded banks, whose delicious landscapes of the Seine and Oise seem to bring sunlight and fresh air into hot rooms and crowded streets; and Constant Troyon, the cattle painter, whose 'Valleé de la Touque' and 'Passage du Gué' deserve to rank among the noblest works of the school. Nor must we forget Charles Jacque, the Troyon of sheep, that excellent artist who painted the shepherd and his flock at early morn and dewy eve, in the fold and in the pasture, and who only died in 1894, the last survivor of this famous group.

Closely associated with all these men, but especially with Rousseau, who for twenty years was his neighbor at Barbizon, and shared his daily walks and innermost thoughts, was Jean-François Millet, the great master, who to the patient and loving study of nature joined the most intimate knowledge of peasant-life. Man in nature was the theme of his art, — man not as a separate being, but as part of the great and changeless

order of the universe. Millet is still spoken of, even at the present day, as the greatest of Romantic masters; but, in point of fact, he had as little to do with the Romantic as with the Classic school. Fresh from the fields of his Norman home, this Gréville lad came to Paris, without prejudices or theories of art, and with no wish in his heart but to paint peasant life as he had seen it and known it from his childhood — the only life, he often said, which he knew anything about. The 'cry of the ground' rang in his ears day and night. That poetry which Corot and Rousseau found in the woods and streams, this great and simple heart found in the life of the toilers of the field, of the hewers of wood and drawers of water, in the sower and the reaper, the ploughman and the shepherd of the plain. Once for all, the painter of the 'Angelus' and of 'Les Glaneuses' ("The Gleaners") showed that peasant life and labor is a theme as heroic and as moving as any legend of old.

What Millet did for the peasant, that Courbet, a painter of a very different type and character, was to do for the artisan. The scene had to be changed from the solitude of the forest, and from the wide plains and the lonely seashore, to the market-place and the boulevards, to the crowded streets and busy rush of life in our great cities, to that Paris which in Millet's eyes was so intolerable.

About thirty-five years ago the art of Japan first became popular in France, and the East began to exert a new influence on the West. The Paris Exhibition of 1867 gave fresh impetus to the growing demand for Japanese lacquerwork, ivories and enamels, which had suddenly sprung up; and those colored prints and drawings, which made so profound an impression on Rousseau in the last months of his life, became generally known in artistic circles. The sight of Hokusai's art was a revelation to French painters. The spontaneous charm and refinement of Japanese artists, their natural instinct for color and sense of space and air, the delicate suggestiveness of their style, and the striking effects which they produce with the simplest means, excited wide-spread enthusiasm in Paris. Under the influence of this new art, the old ways of looking at nature were transformed. 'The eye,' in Ibsen's phrase, 'was born anew;' the relations of the universe to sunlight and atmosphere became the subject of scientific study, and a new method of interpreting nature was suddenly revealed. 'Let the sun come in,' wrote Zola, the champion of the new movement, 'and render objects as they appear under the illumination of broad daylight.'

The name 'Impressionist,' which has now been definitely adopted by the new school, dates from the year 1874, when the group of artists hitherto known as Indépendants or Intransigeants held their first exhibition at Nadar's Gallery, in the Boulevard des Capucines. On that occasion, Claude Monet painted a sketch of a sunrise at sea, and, being at a loss for a name, described it in the catalogue as 'Une Impression.' Other artists followed his example, and the critics began to speak of the exhibition at Nadar's as the Salon des Impressionistes.

Manet, too, had felt the charm of Japanese art, and under this new influence his thoughts and aims again changed. The 'Déjeuner sur l'Herbe' of 1863, and the more famous 'Olympia' of 1865, mark a fresh stage in his development. Henceforth Manet was determined to see with his own eyes, and to prove that the modern life he saw around him was as capable of artistic rendering as any other phase of human existence. The nude girl with the straight black hair and thin angular form, reclining on her white bed, while a negro boy offers her a bouquet in a white-frilled paper, is the modern counterpart of Titian and Correggio's goddesses, just as in 'Le Déjeuner sur l'Herbe' we have a new version of Giorgione's 'Concert Champêtre' in the Louvre. Here the sunbeams flickering through the leaves and their reflection in the flesh-tints of the woman on the grass show that Manet's thoughts were already busy with that subtle analysis of natural phenomena which occupied so large a place in his later works. His next pictures were a series of pages from Parisian life, closely studied under the noonday sun or by the artificial light of gas-lamps and candles.

Edgar Degas had sounded all the depths of French art, and passed through many successive phases, before he applied his marvellous powers of brain and hand to the reproduction of contemporary life. Every phase of Parisian society has sup-

plied him with subjects from his brush, from the laundress bending over her steaming wash-tub or ironing out her clean clothes, to the milliner showing off hats and bonnets at the counter, or the fashionable woman at the theatre or in her bath. He is equally at home in the concert-room or at the *café*, in the green-room or on the boulevards. But his favorite themes are the race course and the opera. He takes the same delight in the wild gallop of jockeys and horses over the course as in the swift motion of ballet-girls flying through the air or poised in fantastic attitudes.

Both in the case of Manet and Degas, we may regret that talent so rare and powers of so high an order should never have been devoted to nobler uses. We may lament the strictly limited range of their vision, and deplore their lack of elevation and inability to realize the higher side of humanity and the finer issues of life. But we must own that they have enriched the world with new sensations, and enlarged the borders of art.

Among the other leading masters of the Impressionist school, one of the most prominent is Renoir, a charming and delicate colorist, who loves to catch the passing emotions reflected on a woman's face, and paint the dimpled cheeks and rosy lips of childhood, and who, in his 'Déjeuner à Bougival' and 'Moulin à la Galette,' has cleverly reproduced that gay conviviality and passion for enjoyment which is one of the chief characteristics of the French nation. On the other hand, Pisarro, who, like Millet, is of Norman birth, shows us the meadows and farmyards of his country home, the gleaners in the cornfields, and the fruit-pickers in the apple orchards, bathed in the glowing sunlight of summer afternoons; while Sisley, the Daubigny of the group, paints impressions of riverside scenery, where reeds grow tall by the running waters and budding trees, and far blue hills melt into the distant horizon.

But the greatest master among Impressionist landscape-painters is Claude Monet. For him man has practically no existence. If human beings appear at all in his pictures, they merely figure as patches upon the sky. His whole soul is absorbed in the pursuit of fleeting effects; his energies are all concentrated on the single task of reflecting, as in a mirror, the subtle changes of light and color which day by day and hour by hour pass over the face of Nature. His early works were chiefly effects of fog and cloud on riverside or seashore, views along the banks of the Seine or on the Breton coast. Then the stir and movement of city-life attracted him. He painted the night express rushing into the Gare St. Lazare, and the surging crowds on the Boulevard des Capucines; and he showed his talent as a decorator and painter of still-life in the admirable flower and fruit pieces, the roses and chrysanthemums, the apples and bunches of grapes, with which he adorned apartments in the Rue de Rome.

The man who first brought light and air into the Salon and made Manet's doctrines popular was Jules Bastien-Lepage. His portrait of his old grandfather sitting in the garden at Damvillers in a worn brown coat, with spectacles on his nose and a horn snuff-box and blue check handkerchief on his knee, and the large picture of 'Les Foins,' now in the Luxembourg, were the first examples of *plein-air* painting that won the suffrages of the public. 'I came into the room,' wrote Marie Bashkirtseff in her Journal, 'and stopped short before 'Les Foins' as you would stop before a window which had been suddenly opened on the country.' The great popularity which this painter enjoyed towards the close of his short life has to some extent suffered a reaction since the premature and lamentable death which robbed France of this promising artist. Degas once called Bastien-Lepage the Bouguereau of naturalism, and of late years it has been the fashion to dwell on the defects and lose sight of the really great qualities of his work. But the enthusiasm and sincerity of the man are beyond dispute, and those wonderful pages which he painted in his native village of Damvillers can never lose their charm and value. In them he has given us a true picture of the peasant-life which he had known and studied in his own *coin de terre*, and has succeeded in doing for the individual what Millet had done before him for the type.

Others have followed in his footsteps with varying measures of success. Chief among them is Dagnan-Bouveret, the friend and fellow-worker of Bastien-Lepage, whose pictures of 'La Bénédiction Nuptiale,' 'Les Noces chez le Photographe,' and Bretonnes au Par-

don,' early made his reputation at the Salon. His finely-colored 'Pain Bénit' —a row of old women seated in a village church, while a chorister distributes the consecrated loaves—is now in the Luxembourg; but perhaps his most characteristic and certainly his most pleasing picture is 'Dans la Fôret,'—a group of woodcutters lingering over their noonday meal in the heart of the forest, to listen to the strains of a rustic violin.

A day came when people began to tire of this perpetual reproduction of the things which they saw around them, of the gaiety and depravity, the elegance and frivolities, the vice and squalor which make up the life of a great city. They began to realize that the actual and material do not after all make up the whole of human life, and remembered that the soul has needs and yearnings of its own. The influence of Wagner's operas, of such English artists as Burne-Jones and Watts, has been strongly felt in cultured circles, and has found expression both in French music and painting. Once more imagination and fancy have claimed their natural rights. Once more the painter has sought to give utterance to the dreams and aspirations of the soul. Once more subjects taken from Greek myths and mediæval poetry, Bible stories and legends of the Saints, are seen on the walls of the Salons. Tissot has given up painting fashionable women and Japanese parasols to make a pilgrimage to the Holy Land and paint the Life of Christ with its proper local surroundings. Cazin frames familiar scenes from Bible story in his dreamy landscapes, and Dagnan-Bouveret has left his peasant pictures for Madonnas and Christs, and has been daring enough to paint a Last Supper on a scale that rivals Leonardo's work.

One important result of this revived idealism is the new impulse which has been given to decorative art. As in Wagner's music-dramas all the arts are laid under contribution, so, it may be, in the future, architecture, sculpture, and painting will combine to form one great and harmonious whole. It is a branch of art that is capable of vast developments, and may be destined to exercise an important influence on the coming age. Meanwhile there can be no doubt that mural painting is practised with greater success in France at the present time than in any other country. Artists of every school have lately been employed to decorate the Hôtel de Ville, and have found a field worthy of their highest efforts in these noble halls and spacious corridors. The foremost representative of this branch of art in the present day, the master whose achievements in this direction entitle him to be called the creator of modern decorative painting, is Puvis de Chavannes, the illustrious President of the Société Nationale des Beaux-Arts.

This distinguished artist, who is now upwards of seventy years of age, was born at Lyons in 1824, and early turned his attention to the decoration of private houses. The two canvases of War and Peace which adorn the Museum of Amiens were exhibited in the Salon in 1861. The allegory of the fruits and industries of Picardy, which bears the name of 'Ave, Picardia Nutrix,' was added in 1865, and was afterwards followed by the 'Ludus pro Patriâ,' an idyllic composition of a village festival, where valiant youths hurl the lance and peasant maidens prepare the rustic feast in a meadow shaded by ancestral elms. During the last twenty years he has decorated the public buildings of Marseilles, of Poitiers, of Lyons and of Rouen, as well as the Panthéon, the Hôtel de Ville, and the new Sorbonne of Paris, with a series of monumental works. The elements of his art are simple and noble, and the pale tints which he employs recall the frescoes of old Italian masters. But all the resources of modern art are brought to bear upon his subject. His finely-modelled figures are bathed in warm light and wrapt in a silvery atmosphere. The scenes he represents are set in beautiful landscapes, where clear streams wind through flowery meadows and shady groves or soft blue hills rise under golden skies.

For some time past this great French master has been engaged upon a series of canvases for the decoration of the Library of Boston. He has already completed a large central subject of the Muses soaring into the air, to welcome the Genius of Light, as well as a number of smaller compositions representing different branches of ancient and modern learning. History and astronomy, dramatic and epic poetry, each has a place in the story. Homer, Virgil, and Æschylus are all here. On one side we see

Plato among his disciples on the banks of Ilissus, summing up the eternal warfare between spirit and matter in the sentence, "Man is a plant of heavenly, not of earthly, growth." On the other, the triumphs of electricity and the world gliding through space are symbolized by two figures, the one in flowing white raiment, the other wrapt in sable robes, who float through the sky over mountain and vale, and flash their tidings of good and evil through the world.

The popularity of this master's work and the influence which his example has had on the rising generation of artists may be seen in the large number of imitations of his style which have appeared in the last few Salons. Two other masters may be especially singled out as sharing this ascendency at the present time. Both of them reflect in a remarkable manner certain tendencies of contemporary thought, and the admiration which both of them excite among young artists proves that intellectual and spiritual qualities, more than any other, attract the youth of the day. One of these masters is Gustave Moreau, whom we sometimes hear described as the French Burne-Jones. If we cannot always recognize in his art the exquisite charm which marks the work of the poet-painter to whom we owe the Briar Rose and the Days of Creation, there are, it must be confessed, certain points in which the French idealist undoubtedly resembles his English master. Like him, Moreau turns away from the dulness and ugliness of the present to the romance of the past. Like him, he is fascinated by the art of the early Renaissance and the spiritual charm of the old Greek myths. When, as long ago as 1864, his picture of Œdipus and the Sphinx appeared at the Salon, he was recognized by a few discerning critics as a new and intelligent interpreter of antiquity, and in this respect his work forms a connecting link between the Romantic painters and the Symbolists of the present day. Unfortunately the greater part of Moreau's works are hidden away in private collections, and the single specimen which is to be found in a public gallery, the Orpheus of the Luxembourg, hardly gives an adequate idea of his varied and interesting art.

His rich imagination, like that of the English painter to whom he has been compared, ranges over many regions, and draws inspiration from the shores of the Ganges as well as from the streams of Parnassus, from the Iliad and from the Bible. Hercules and the Hydra, Jason and Medea, David and Buddha, Herod and Salome, all find a place in his pictures. And, like Burne-Jones in this again, he seldom attempts to represent violent action or passionate emotion, but contents himself with rendering what Baudelaire has called 'the holy desires, the gracious melancholies, and the noble despairs which belong to the celestial regions of poetry and of pure beauty.'

The third master who, at the present moment, shares the fickle breath of popular favor with Puvis de Chavannes and Gustave Moreau, is Eugène Carrière. Carrière married early, and lived at Vaugirard for the next five years, working strenuously at his art and using his wife and children as models. This preparation fitted him for his future vocation as the painter of motherhood; not, as De Goncourt points out, the calm Virgin-mother whom the old masters painted in the ages of faith, but the modern mother of a later and sadder day, whom we all know, full of cares and fears, clasping her little ones to her breast as if to shield them from harm, covering them with passionate kisses, keeping them as long as may be at her side, and following them to the last with anxious eyes and dim forebodings at her heart.

Such are some of the chief influences which are clearly marked in French art at the present time. But, side by side with these recent developments, the old traditions still hold their sway. M. Bonnat, the respected president of the ancient Société des Artistes Français, maintains his position as the official portrait-painter of the Republic, and records the features of the leading men of the day in the same forcible but hard and dry style, without ever admitting us to a very intimate acquaintance with their personality. Cabanel, the head of the École des Beaux-Arts during the Second Empire, who was long regarded as the leading representative of academic art, died a few years ago, but Bouguereau still holds fast to the old convention, and year by year exhibits nymphs and Madonnas modelled on the same pattern. Lefebvre and Henner follow his example with a more genuine artistic inspiration, and imitate the

great Renaissance masters in that somewhat mannered style of which Baudry, the decorator of the Opera House, was the ablest exponent.

Lastly, Ernest Meissonier, the veteran master who six years ago headed the secession of the younger and more independent artists from the Elysées to the Champ de Mars, has left us the singular example of a painter who for sixty years stood aloof from each successive movement of his times, and could say with truth that he had seen Classicists and Romanticists, Idealists and Naturalists, Impressionists and Symbolists all come and go, without moving an inch from the position which he had adopted from the first. Early in the thirties he began to paint small *rococo* subjects, chiefly remarkable for their delicacy of execution and elaborate imitation of eighteenth-century costumes; and when in 1859 he followed Napoleon III. to Italy and became the military painter of the Second Empire, he adapted the same minute *technique* to his battle-pieces. And since after Solferino there were no more victories to record, he turned his attention to the campaigns of the First Empire, and found a congenial theme in the glories of Napoleon I.

The industry and zeal which Meissonier brought to his task and the laborious preparations which he bestowed upon his works have seldom been equalled. He spent a fortune in buying old harness and armor and horses of the same race and color as those that were formerly ridden by the Emperor and his staff, and studied the exact localities of the battles, which he had to paint, on the spot; strewing baggage, and arms, and wagons about the field to produce the desired effect. But in spite of the immense amount of pains which he took, and the accuracy with which he has reproduced each separate detail, his pictures must be considered rather as admirable historical illustrations than works of art. Every button on the uniforms of his officers, each hair in their horses' manes is painted with the same care, but the faces lack expression and individuality, and there is little attempt to render movement or atmosphere. 'All is iron, save the cuirasses,' was Manet's criticism of the Charge of Napoleon's Cuirassiers, which is generally considered one of Meissonier's greatest works.

The interest of the subject, no doubt, goes far to explain the extraordinary popularity of Meissonier's battle-pieces, especially of the famous '1814,' which was bought by M. Chauchard, a few years ago, for 850,000 francs,—a sum even larger than that which the same collector gave in 1889 for Millet's 'Angelus.' The great Emperor, in his torn blue coat, with pale worn face and set lips, riding his war horse at the head of his tired staff, as he leads the remnants of his *grande armée* over the snowy plains of Champagne, is a memorable and pathetic figure which cannot fail to thrill the heart of every Frenchman. But signs are not wanting to show that the excessive admiration which Meissonier's works at one time excited is already on the wane, and in future days he will probably be remembered chiefly as a 'little master' of rare skill and patience, whose *rococo* pictures and battle-pieces helped to bring about the transition from the past to the present, and who may justly claim to have been one of the pioneers of modern realism.

At the present time, perhaps the most striking feature of French painting is the great variety of style which is displayed. One thing is obvious. There has been a great advance in actual craftsmanship during the last thirty years. The Paris-trained artist of to-day paints with a sureness of hand, a skill and completeness, the like of which has never been seen before. And there has been a corresponding advance in the critical knowledge and understanding of art, not only in France, but also, let us hope, in other countries as well. The artists have learnt to paint and the public has learnt to see. The eyes of this generation have been opened. We have been taught to find lovely visions of color and atmosphere in the most unexpected places, and to look for beauty where we never dreamt to meet her; and we have learnt to form truer and more accurate judgments, and to recognize merit in the most varied and conflicting styles. All we ask is that a work of art should be the fruit of a genuine inspiration—in Goethe's words, 'the result of an inward, single, and independent conviction. Then, whether born of untutored instinct or the off-spring of a cultured mind, it cannot fail to be complete and living.'

THE SELF-CULTURE OF THE WORLD'S WORKERS

THE annals of the human race show that the great, practical, real work of the world — the work that has often shaped the destiny of nations and changed the face of the earth — has been done by men of self-culture — men whose youth was not wasted in acquiring useless knowledge. While our university men are spending their days and nights in trying to discover the meaning of an obscure passage in Aristotle or Plato, which, when found, as Shakespeare said of the grain of wheat in the bushel of chaff, is not worth the search, practical men — the Franklins, the Morses, the Edisons are bringing the lightning from heaven to serve as man's handmaiden. All the wonders of Aladdin's lamp have been realized, not by the *genie* of the Arabian story, but by the genius — the practical genius of man. While the slaves of the dead languages are wasting the precious hours of too short a life in useless attempts to ascertain the value of a Greek particle, which really has not a particle of value to us of the living, breathing present, the practical men of the day are bringing New York and St. Louis, Washington and Chicago, within speaking distance. While your classical scholars are poring over the dead writers in order to discover the comparative size and speed of the Greek and Roman chariots, our live, practical men are running trains from New York to San Francisco in five days, supplied with comforts and conveniences which all the power of the Cæsars could not command.

Thomas Carlyle spent three-score years in planning and proclaiming his "philosophy," which has not added a single pleasure to life, or a single benefit to the human race. During those barren years men of self-culture were revolutionizing the world by their practical work: George Stephenson, who had no college training — no education of merely "words, words, words," was inventing the railway locomotive, which was in a few years to revolutionize the civilized world; Morse was inventing the telegraph, which was to bring all nations into daily and hourly communication; Pitman was inventing phonography, which was to preserve for all time the wisdom of orators; Daguerre was studying out that remarkable invention of which we live to witness its perfected results in photography; Elias Howe was inventing the sewing-machine, which, by saving time has lengthened life; Cyrus H. McCormick was inventing those wonderful agricultural instruments that have changed the conditions of husbandry, and enabled a boy to do ten times more work than a man could do by the old method.

These were self-cultured men — practical workers — men whose achievements have lightened labor, saved time, made life more comfortable. Carlyle preached what he was pleased to call "The Evangel of Labor." This so-called "blessed message to humanity," was "full of sound and fury," signifying nothing. It is not necessary to preach a "Gospel of Labor;" unfortunately, to work is the inherited curse of the human race, coming down from the primeval times of the "gardener Adam and his wife." Work is necessary, but let it be work that points to a "rich end." Let it be work that shall lessen the misery of the world, that shall make glad the homes of the poor, that shall bring hope to the despairing, that shall relieve suffering. The poets of our day and generation, not to be behind the theoretical philosophers, have had for the burden of their song the inspiring word "work." Tennyson, addressing the world at large, calls upon "Men, my brothers — men, the workers;" Longfellow proclaims that the destiny of mankind is to "labor and to wait," and "to suffer and be strong," forgetting that suffering does not strengthen. Truly has such singing been pronounced "false and fatal music." The true friend of the poor is he who saves him from grinding toil by the invention of labor-saving machines, who raises him from a common workman to a skilled artisan; then he can say of himself as Jean Paul Richter did: "I have made as much out of myself as could be made of the stuff, and no man should require more."

Franklin, the master-spirit of his age in practical science, finished his school education before he was eleven years old, but his real education ended only with his life. He was always adding to his knowledge, whether at home or

abroad, on land or at sea. Nothing was too small or too large for the broad and comprehensive mind of this practical philosopher; he did not disdain to write papers on warming and ventilating rooms, on the prevention of colds, on smoky chimneys, on cleaning streets, on sea-sickness, while engaged in the loftiest political and philosophical speculations. Franklin was not only an honor to America, but to the human race. Born in the humblest rank of life, he succeeded by his own unaided efforts, and by extraordinary perseverance, in attaining the highest position in science and philosophy, and winning the respect and admiration of the old and new world. The son of a tallow-chandler, he became the friend of Washington and the companion of kings and princes.

When a boy, his father used to repeat to him this saying of Solomon's, from Proverbs: "Seest thou a man diligent in his business? He shall stand before kings." Franklin was diligent in his business, and lived to stand in the presence of five kings, one of whom, Louis XVI., king of France, gave him his picture set around with diamonds. The good which Franklin did has lived after him, and shall continue to live until this world ceases to be; he invented the lightning-rod; he discovered that electricity and lightning are the same; he started the first public library in America (the Philadelphia Library, which still exists in splendid vigor); he set on foot the first fire company; he helped to establish the first academy in Philadelphia (now the University of Pennsylvania); he helped to found the first hospital in that city; he signed, and helped to write, the Declaration of Independence. This is a superb record for a self-cultured man, who went to school for only two years.

Of the numerous examples of self-culture, the illustrious Washington is *facile princeps*. His fine, vigorous, practical mind was not trammelled by the useless learning of the schools. His education began at what was called "an old field schoolhouse," was completed before he had advanced more than a few years in his teens, and was entirely different from the long course of studies that are now deemed necessary for a young man of his rank in life. He never attempted the dead languages, nor any of the 'ologies and apologies for an education which in these days unfit the student for the practical duties of life. Yet Washington was called to the grandest destiny ever given to a human being; and that he performed his part well is the universal verdict of the world.

Patrick Henry, who set the ball of the Revolution moving, and thus started that mighty movement which has resulted in this magnificent republic, was sent to a country school, where he learned to read and write; his father then undertook his education, but he was more frequently seen with a gun on his shoulder, or a fishing-rod in his hand, than with a book. During those early, impressionable years, this born orator was studying nature and meditating upon the complex problem of government; and when the time arrived for the display of his genius, he burst upon the world with an impetuosity that carried everything before it.

One of the best representatives of the sturdy Anglo-Saxon race was William Cobbett. He was the most powerful political writer of his time, and so vigorous were his attacks upon obnoxious men and measures that Hazlitt called him a fourth estate in the politics of England. His style is said to have the clearness of Swift, the naturalness of De Foe, with the picturesque, satirical description, of Mandeville. He received the merest rudiments of education from his father, who was ignorant and could, therefore, teach his son very little. After young Cobbett learned to read, he became a lover of books, and once spent his last shilling in buying a copy of "The Tale of a Tub." By hard study and incessant application, he taught himself grammar, and mastered the English language. His grandfather was a day laborer; his father a small farmer; and William, in his youth, followed the plough. His education was received in the fields, and he looked back to this in after-life with gratitude, if not with pleasure, congratulating himself that he had received such an education, otherwise, he said: "I should have been as great a fool as any of those frivolous idiots that are turned out from Winchester and Westminster School, or from any of those dens of dunces called colleges and universities." He became the invincible champion of the oppressed, the determined vindicator of the rights of the people, and was re-

warded by a seat in the Parliament which was elected after the passage of the Reform Bill in 1832. He wrote one hundred books, chiefly upon the topics of the day. They are seldom read now, but they did good work at the time they were written. William Cobbett deserves to be remembered as the founder of the Reform Movement in England, as the true friend of political freedom, and as the unflinching defender of the plain people.

If asked to name the President of the United States who most truly represented the American spirit, Andrew Jackson should, undoubtedly, be mentioned. This remarkable man was the child of poor Irish immigrants. He was educated in a log hut in the pine woods of North Carolina, from which he went at the age of fourteen to fight in the Revolution. His education was such as any schoolboy in these days would be ashamed of, but he possessed a brave and unconquerable spirit. Left alone in the world before he was fifteen, by the death of his father, mother and brothers, he worked out his own destiny with indomitable pluck, and splendid success. Having only a limited knowledge of law, he boldly crossed the mountains into Tennessee, settled in Nashville, and fought his way to success at the bar; became a judge; a member of Congress; United States Senator; general in the War of 1812; the victorious commander in the battle of New Orleans; closing his public career as President of the United States during two eventful terms, in which he proved himself as great a statesman as he had already proved himself a born soldier.

General Jackson's life-long political antagonist, Henry Clay, was the son of a poor Baptist preacher in Virginia, who died when the future statesman was only five years old, leaving a widow and seven small children to shift for themselves. Under these circumstances, young Clay's education was of the scantiest kind, picked up in a log-cabin schoolhouse, under teachers who knew little, and could impart only the rudiments of English to their pupils. At the age of fifteen, he began the battle of life as a clerk in a small retail store in Richmond. He soon left the uncongenial employment to accept a clerkship in the office of the clerk of the high court of chancery. Here he remained four years, when he commenced the study of law in the office of Robert Brooke, attorney-general, and afterwards Governor, of Virginia. During these years he was fortunate enough to attract the favorable notice of the celebrated Chancellor Wythe, who, becoming interested in the bright young man, directed his studies, and recommended to him the best books for acquiring a knowledge of the grammatical structure of the English language. After studying law a year, he was admitted to practice, although not yet twenty-one years old. He soon afterwards removed to Lexington, Ky., where his eloquence, his frank and cordial manners, and winning address, in a few years gained him a large practice and distinguished political honors, in his State and in the United States. Henry Clay's public career is familiar to most American readers. Let it suffice here to say that he became a popular idol, and for fifty years was regarded as the Cicero of America.

Turning from these self-cultured men in public life who have contributed so much to the world's history, the reader is reminded that all the world-workers are not politicians, or soldiers, or men of affairs. Some of the greatest benefactors of the human race have been poets, artists and men of letters. It can be said without fear of contradiction that Shakespeare is one of the greatest benefactors of mankind that ever lived. An eminent Englishman of this century once asked the English nation — "Which will you give up, your Indian Empire, or your Shakespeare" — and, answering for the English nation, he said: "Indian Empire, or no Indian Empire, we cannot do without our Shakespeare." Yet this priceless treasure of English-speaking people — this Prince of Poets and poet of princes — was peasant born. He was the eldest of ten children, and his father, who was a poor dealer in wool, could not afford to give him either a university, a collegiate, or even a common-school, education. He was sent to a free-school, where he acquired only the rudiments of an education, for he was withdrawn from school at an early age in order to assist his father in supporting the family. His want of a classical education (if we may presume this), was an advantage to his great natural genius. The deeper study of the ancient writers might have made him a more correct poet, but it would, have restrained the

fire, the passion, the noble rage, so admirable in his works. His supreme genius would have been cramped by the classical models, and this myriad-minded man would have fulfilled only one half of his immortal destiny. Had Shakespeare's natural genius been subjected to the severe rules of the classical drama, the world might have lost Romeo and Juliet, Antonio the royal Merchant, Shylock the Jew, the gentle Desdemona, the erring yet noble Moor, the stately Portia, Falstaff, Lear, Miranda, Ophelia, Hamlet, and that infinite variety of characters, representing all ranks of life, many nationalities, and scenes the most diverse. All the nations of the world have gradually come to the opinion that Shakespeare is the greatest poet that ever lived. Kings may be dethroned, empires fall, palaces crumble into dust, but Shakespeare will survive them all.

Robert Burns has been pronounced the "most gifted British soul of the eighteenth century." Burns was only a ploughboy with a ploughboy's schooling, but his work will live long after the castles of contemporary nobles have fallen into dust. So witty was this peasant-born poet that he "lifted duchesses from their feet;" so human in his speech that the waiters and ostlers at the inns would get out of bed and come crowding to hear him talk. What a tribute to the genuine sincerity of this man's humanity! One month he is a ruined ploughman, meditating a flight to the West Indies to escape imprisonment for debt; the next, by an amazing transition, he is in Edinburgh, "in a blaze of rank, beauty and fashion, handing down duchesses to dinner, the cynosure of all eyes." He was not dazzled by this extraordinary change in his surroundings, but received the honors of society with the tranquillity of a born prince, entirely unabashed, and neither awkward, nor astonished, nor affected — a true man, one of nature's gentlemen.

Coming down to our own day and generation, we find that one of the most practical intellects of the age is that of Thomas A. Edison. He learned to read at his mother's knee, and like most of the world's workers, he early became fond of reading. He never went to school more than two months in his life. At twelve, he was earning his own living as a train boy on the Grand Trunk Railroad, running between Port Huron and Detroit. He sold papers, magazines, toys, fruit, etc. He made $2,000 during the four years he was engaged in this occupation, all of which he gave to his parents. At twenty-two, he was tramping the streets of New York, without a cent in his pockets. Ten years later his wonderful inventive genius had made him rich and famous—his income was as large as that of the President of the United States, his name known over the whole civilized world; recognized as one of the most remarkable men of his age.

Let us glance, for a moment, at some of his inventions: by his automatic system of telegraphing, one thousand words a minute can be sent over a single wire; by his quadruplex method, four distinct and different messages pass over the wire at the same time; by the phonograph, all kinds of sounds are preserved and may be reproduced ages hence; by the telephone sounds are conveyed over any distance; by the electric light night is changed into day. Within the memory of living men, the editor of the English Quarterly Review once gravely declared that he would "rather trust himself to the mercy of a Congreve rocket than ride on a railroad train moving at the rapid rate of eighteen miles an hour;" and when we know that we now ride in perfect safety sixty miles an hour, we can hardly venture to predict any limit to the marvellous inventive genius of Thomas A. Edison. Such wonders has he accomplished with electricity, that we naturally ask, "What next?" The genius of man is limitless. "Hundreds of discoveries are still to be made by men of trained and observant minds. The lightning of which we stand in awe is nothing more than what a lady might brush from her cat's back, or from her own hair with a brush. Science reveals to us two infinities. It begins in wonder, and ends in wonder, and is the great angel of mercy devoting itself to the welfare of the race."

When we remember the great work that has been done in the world by Columbus the discoverer, by Fulton the inventor, by Peabody the philanthropist, by Dickens the novelist, and by many others, we should be encouraged to go on bravely with our destined work, knowing that the world's workers have been and are men of self-culture. EUGENE L. DIDIER.

CONTEMPORARY OPINION:

A ROMAN FUNERAL*

IT is a week since Cneius Cornelius Scipio died. He lies in state in the hall of his house on the Palatine, one of the last family mansions left on the hill, which the Emperor wants to make entirely his own. He lies in the great hall, where the statues of his ancestors look down on him who has at last become one of them — gone over to the majority. His son Lucius knelt at his bedside when he breathed his last; kissed him a moment before death, to catch the last faint breath. From the finger he drew his ring, which has now been replaced in view of the approaching funeral.

* * * *

The herald has gone forth, to invite who will to attend. For this is no ordinary man who is dead. Rome knew him well; and his family, we may be sure, will give him a funeral befitting his rank. Not at night will his funeral be, like that of some poor plebeian who has gone the long journey; every solemnity that the servants of Libitina† know will be lavished on his obsequies. From early morn the folks have been streaming to the door, clad in suits of customary black; the undertakers have been bustling about and are now marshalling the splendid procession. Police officers are in attendance, to assist in maintaining order. The nearest relatives have gathered around the deceased. They lay him on his bier, no extravagant couch of ivory, as some who should have known better have lately begun to affect, but carved of dark wood, and stately with dark rich hangings, as befits a Roman citizen. And now at a given word these relatives lift the bier on to their shoulders, and the long procession files down the hill, and out to the place where the pyre is built, not far from the family burying-place.

The van is led by trumpeters, blowing a loud note of lamentation, and opening the way through the crowded streets near the Forum, to which their steps are first directed. Next come singing women, chanting mournful praises of the deceased. Yet a third band of hired attendants succeed, actors, reciting appropriate sentiments from familiar poets, their chief also exhibiting in dumb show the action which made the dead man famous. But who are these who follow now? Have the dead arisen to do him honor? There, large as life, walks the long line of noble ancestors whose blood flowed in the dead man's veins. Waxen masks, modelled on the busts which stand in the great hall, cover the faces of those selected to personate the heroes; each wears the robe he would have worn this day if the grave had given him up. It seems in truth as if all the mighty ones of his race, generals, and statesmen, heroic names of Rome, have arisen to lead their descendant with welcome to his resting-place among them. Old stories of wars in Apulia and Samnium, with Gaul and Carthaginian, crowd on the beholder's mind. There goes he who was proudly styled "African," the conqueror of Hannibal, "great Scipio's self, that thunderbolt of war." There, he who acquired a corresponding title from his victories in Asia against Antiochus. There, he who blent the elegance of Greek learning with the manly valor of Rome, the stern patriot who approved the slaying of his own usurping kinsmen, to whom a master-pen has lately given fresh immortality as the friend of Lælius. And many more, famous of old, and living still in the memories of men, mingle in this strange procession where the immortal dead do honor to their latest son.

Hitherto the procession had been wholly professional, not to say theatrical, in character. But these who come next recall the gazer to every-day life. For these are they who late were slaves, whom the liberality of the deceased has made free. Vulgar minds may ostentatiously manumit by will large numbers of slaves, swelling their funeral pomp at their heir's expense; but where no such sordid motive has directed enfranchisement, who so fit to be there as they? Who have better right to walk, as they now walk, immediately before the bier?

* See the article on Funeral Rites, in the Encyclopædia Britannica, Vol. IX, page 826.

† The Roman Goddess of Death and the departed, and identified with Proserpina.

In front of the bier they bear tables, inscribed with the deeds of the deceased, the laws he carried, the battles he fought. Captive banners and trophies of war are displayed; there is a map of some unknown land he conquered. All Rome may see to-day, if there be one here who needs the telling, how great a man is now being borne through the city he loved so well. Behind the bier come kinsmen and friends, women as well as men. The latter are dressed in black, as are all the professional assistants; the women wear white, a custom which, being somewhat novel in Rome, elicits a good deal of criticism. Bareheaded walk the women, with dishevelled hair and hands that beat their breasts; the male relatives, with an equal inversion of ordinary habits, have their heads closely veiled. Innumerable the crowd that follows. All Rome's best are there. The Senate have turned out to a man. Many join the procession out of mere curiosity, but most from a desire to pay this tribute of respect to one whom they have so long honored from afar.

And now they have reached the Forum. In the midst of this great space, the Westminster of Rome, the procession halts. The ancestors of the deceased seat themselves, in solemn semi-circle, on the ivory chairs of the magistrates. In their midst his nephew, Publius, well known for his oratorical powers, ascends the rostrum, and pronounces a long and labored panegyric over him who lies deaf and unheeding before him. He tells how his youth was devoted to study and martial exercise, not wasted on luxury and riotous living; how his manhood was spent in fighting Rome's battles abroad, and upholding order at home — an easy task now the might of the Emperor has crushed all factious sedition. He speaks of his piety towards the Gods, his love for his wife and children, his zeal on behalf of his clients, his kindness to all with whom he was brought into contact. In everything, he says, he lived worthy of his high lineage, worthy of those ancestors whose effigies are present beside him. And so the speaker is led to trace back the grand line of ancestors, and in kindling words remind his hearers of all the Scipios had done for Rome. What an Athenian audience felt when their orators recalled the names of those who fought at Marathon, that surely must a Roman audience have felt when they were reminded of the glories of the Scipios.

The bier is taken up, the procession is marshalled again. Through the bustling streets, out through the city gates, the famous Porta Capena, out on to the Appian Way, streams the long line of mourners. At the gate many generally leave the procession, but to-day they have but a short way farther to go, for the tomb of the Scipios is not far beyond the gate, on the side of the Appian Way. The crowds, therefore, pour out almost without diminution, till they reach a cleared spot not far from the tomb, whereon a great pile has been erected. Huge logs of wood form the body of the structure, interspersed with various inflammable substances; it stands four-square, like some gigantic altar to the unseen powers. A row of cypress trees, transplanted for the occasion, throws a gloomy shadow across it. The bier is placed on the top with all its splendid belongings. Ointments of the costliest description, spikenard and frankincense, and all the strongest and sweetest smelling unguents, are plentifully poured on the pile; Palestine and Syria, Arabia, Cilicia, have been laid under contribution. All is now ready, and as Lucius Scipio steps forward, the women raise a piercing wail. You may see the tears in the young man's eyes, for his head is turned to us and away from the pile, as with trembling hand he applies a lighted torch. The flame mounts skyward with immense rapidity; huge swirls of smoke, pungent yet fragrant, sweep to leeward. As the fire reaches the body, the wailing of the women is redoubled. The men stand by in silence. No funeral games are exhibited to-day during the burning; nor do his relatives follow the somewhat barbarous custom of throwing in armor, clothes, and valuables to be consumed in the flames. The great crowd stands well-nigh motionless in genuine grief.

It does not take very long to reduce the whole to ashes. The pitch and rosin, the rich unguents, all make the fire fierce and brief. The crowd melts away, while the relatives perform the remaining rites. The embers are quenched with wine, and a solemn invocation addressed to the soul of the departed. Those officiating then wash their hands with pure water, and

proceed to gather the calcined bones, easily distinguishable from the dark wood-ashes which cover them. These precious relics are solemnly sprinkled, first with wine, then with milk, dried with a linen cloth, and deposited in an alabaster urn. Perfumes are mingled with the ashes. The urn is then carried to the tomb, and deposited in the niche prepared for it. All round the walls you see similar urns, each in its own niche, each inscribed with a simple memento, like the inscriptions on our tombstones. All being now over, the family take their departure, with pious ejaculations and prayers for calm repose — "Sweet be the place of thy rest!" Outside the tomb, the priest sprinkles each of them thrice with pure water, to remove the pollution of the dead body, which was recognized by all nations of antiquity; and then dismisses them with the well-known formula *Illicet*, ye may depart.

The family and relatives of the deceased make their way quietly home along the Appian Way, which is lined for a considerable distance with tombs like a suburban road with villas, and through the crowded streets, which have now resumed their usual aspect. On reaching the house they will be purified afresh by water and fire, being sprinkled with the one, and made to step over the other. For nine days they will then remain apart, mourning for the dead. On the expiry of that time, a sacrifice will be offered to the gods below, and a great funeral feast will be given, at which all the guests will be dressed in white. Games, it may be, and shows of gladiators, will then be exhibited; food will be distributed to the populace. After that the family will return to their ordinary avocations: the men will not resume their mourning garb; the women will wear theirs for some time longer, the widow perhaps retaining hers for a year. But not for long will the dead man be forgotten; at intervals they will go to the tomb on the Appian Way, bearing flowers and perfumes to lay beside the ashes of the dear one gone. Lamps will be lighted there, to relieve the sepulchral gloom. And on stated occasions commemorative feasts will be held, where the family and friends will assemble, dressed in white, to do honor to the memory of the departed.

Such, says the authority whom we have quoted, was a funeral in the old days of Rome.

THE GERM LIFE OF THE SOIL

FORMERLY we were wont to regard the soil as composed of dead, inert matter; now, however, thanks to recent bacteriological research, we know better. Most of it, it is true, is composed of dead matter; but this is so inextricably and intimately permeated by microbic life that it can hardly be regarded as dead. What all the functions of these microbes are, observes a writer recently in the Edinburgh "Scotsman," we do not as yet fully know, but many effect the decomposition of organic matter; which, indeed, they have been shown to be among the earliest agents in giving rise to. The fertility of a soil is directly due to their initiative, for they elaborate in various ways the food materials of the plant, and convert the latter into forms suitable for assimilation.

Soils may be said to be, in a very direct sense, the product of bacterial work through the long past ages. Till recently it was believed that these organisms required for their development organic matter; but one of the most important discoveries in this domain which has recently been made goes to prove that some of them, at least, are able to subsist on a purely mineral food. These latter microbes are of very wide occurrence, and are found even on bare rock surfaces. Although we know as yet but very little with regard to the methods in which the decomposition of the material of the soil is effected, it would seem as if the ultimate results obtained are due to a highly interesting system of co-operation. Thus to one class is due the initial stage in decomposition; while another class carry out the work started by the former bacteria to a further stage of development, and so on.

Few of us probably grasp the impor-

tance, from an economic point of view, of the process of the putrefaction of organic matter constantly going on in the soil. It is one of the great factors in maintaining the circulation of matter, a law on which the perpetuity of all life depends. There is in this universe only a certain definite amount of matter suitable for the formation of new animal and vegetable life; hence, to permit of the formation of new forms of such life, it is necessary that the dead matter should become broken up, and rendered available for this purpose. Were this law inoperative, the result would of course be that the earth's surface would become encumbered with the accumulation of dead organic matter to so great an extent that animal life would be impossible. Hence it is that, in this respect, bacteria perform services to humanity, as well as to all other forms of life, of incalculable value.

With regard to the occurrence and distribution of these organisms in the soil, investigations have shown that it is almost entirely in their surface portion they are to be found, and that the deeper we go the less numerous do they become. Among the factors determining their abundance, the season of the year is one of the most important. Since among the conditions under which bacteria live one of the most important is the existence of a certain temperature, we find that they are most abundant during the summer time. Indeed from spring to autumn there is a steady increase in their number. They may be divided into different classes, according to the nature of their products. A large class oxidize the ingredients of the soil by assimilating the organic matter, converting it into carbonic acid and water, and sometimes actually giving off oxygen. We have another class whose action is of a completely opposite character. These organisms exercise a reducing influence that is not helpful to the processes of agriculture. To this class belong those which give rise to a loss of nitrogen from its valuable compounds, and which thus impair the fertility of the soil. But, happily the work of this class of organism is largely neutralized by that of a recently discovered class which enrich the soil in this valuable fertilizing ingredient by fixing the free nitrogen of the air, and thus bringing it within the scope of the plant. Of these three types of organisms examples may be cited; and in doing so we shall select such as have to do with either the fixation or elaboration of that most important plant-food, nitrogen.

In the first place we have what are called nitrifying organisms. These organisms effect the preparation of nitrogen in a form suitable for the plant to absorb, and furnish a very good example of the co-operative method in which these minute denizens of the soil carry on their work. In the process three stages may be distinguished, in which it would seem, three different classes of organisms are implicated. The first stage consists of the conversion of nitrogen in its various organic forms into ammonia. Abundant in the air, in rain-water, and in the surface of the soil, the microbes, active in the process of ammonification, flourish best at temperatures between 30 degs. and 90 degs. Fahr. Temperatures near the freezing point, or above 110 degs. Fahr., check their development. The second stage in the process is effected by ferments of a globular form, and consists in the conversion of ammonia into nitrites; while the final stage, which is effected by ferments four times as small as those effecting the second stage consists in the conversion of nitrites into nitrates.

The conditions regulating the process of nitrification are known and throw considerable light on the question of the fertility of the soil. They are chiefly limited in their occurrence to the superficial layers of the soil, and have not been met with at a depth below six feet; while probably active fermentation is not to be found much below eighteen inches. The reason of this is that one of the chief reasons of their abundant development is the presence of a plentiful supply of air. It is on this account that they are not found in water-logged soils. Their susceptibility to poisonous substances, such as certain compounds of iron, which are apt to be produced where the soil is not properly aërated, and to sulphur compounds, serve to explain more clearly than was previously realized the reason of the inimical action of such a body as fresh gas-lime when applied as a manure.

Here a very interesting practical question presents itself. Since the fertility of a soil may be said to depend to no small extent on the abundance of these nitrifying ferments, in the case of a soil

which from some cause or another may have had these valuable ferments killed out, is it possible — it may be asked — to re-seed the soil? To this it may be answered that numerous experiments have demonstrated in a striking manner the value of inoculating a sterile soil with nitrifying ferments. This has been effected by strewing over the fields some soil rich in nitrifying bacteria, such as an old garden soil. There can be little doubt, indeed, that the value of farmyard manure to a certain extent, may be ascribed to the fact that it supplies the soil with abundance of such organisms. The principle of soil inoculation, as we shall immediately point out, has been more systematically worked out in the case of another class of organisms — viz., those which fix free nitrogen from the air.

The discovery of these organisms in certain excrescences or nodules on the roots of certain leguminous plants, such as peas or beans, was made in the year 1886. It has since been discovered that it is highly probable that quite a number of different kinds are implicated in the process; indeed, that each different kind of plant has its own special kind of organism. These invade the roots from the soil, and give rise to the formation of nodules, where they multiply with great rapidity, and stimulate the growth of the plant cell. Three stages in the process may be defined. The first is that during which the bacteria live as parasites at the expense of the plant cell. Gradually, however, the struggle for existence becoming very intense, the bacteria become passive, and the cells become filled with bacteriods or bacterium-like bodies. It is when this period is reached that the plant absorbs the contents of the nodules, and leaves the cells, out of which they are formed, in a limp condition. How exactly the nitrogen is fixed we do not know. All that is known is that the nodules are necessary for the process, since the more abundant they are on the roots of the plants the more abundant is the quantity of nitrogen fixed. It would seem that the soil is by no means an unimportant factor, since from it must come the fixing bacteria; and experiments have shown that in this respect soils differ very considerably, some being more plentifully provided with nitrogen-fixing bacteria than others.

The discovery of the nitrogen-fixing bacteria was not long in being put to a practical use. Pot experiments were very soon started, in which soil extracts were used and experimented with. The result of these experiments showed that all soils are not equally suitable for growing leguminous crops; that many, indeed, are poorly supplied with nitrogen-fixing bacteria; but that such soils when inoculated with a soil extract from a portion of the soil taken from other fields rich in such bacteria yield a luxuriant growth. These experiments have led Professor Nobbe, a well-known plant physiologist, to prepare pure cultures of the nitrogen-fixing bacteria for general use. This very practical application of bacteriology to agriculture was patented in February of this year. The cultures are made on a wholesale scale by a well-known German firm; the same, indeed, as has already undertaken the manufacture of diphtheric anti-toxic serum. Of nitragen, as the culture is called, some seventeen different kinds are prepared. The pure cultures are grown in argar gelatine — a common medium for the growth of bacteria. Sufficient for the inoculation of an acre of soil can be purchased in Germany for the small sum of one and a half dollars. The culture may be applied in either of two ways — by making a watery extract of it and immersing the seed to be sown in this solution, or by mixing the culture with some pure sand.

We have referred to a class of organisms whose action is inimical. Among these the most important are those which effect denitrification, as it has been called. They undo the work of the nitrifying bacteria, often with the result that a portion of the nitrogen is set free, and escaping in the gaseous form, is entirely lost to the soil. The conditions which favor the development of the denitrifying bacteria are the opposite of those which favor the development of the nitrifying bacteria.

It may be well to add, in conclusion, that the soil may contain disease-producing germs. Thus, those giving rise to the deadly disease lock-jaw, or tetanus, are known to be often present in the soil. By the burial of animals which have died of germ-produced diseases, the propagation of that disease has been known to result.

C. M. A.

THE "PASSING" OF A DISTINGUISHED LITERARY WOMAN:

MRS. OLIPHANT, THE NOVELIST

AT the limit of the Psalmist's span of life—three-score years and ten—one of the most industrious and prolific of English literary women has passed into the spirit-land, from which, in one of her books, she has sought to raise the curtain. In the death of Mrs. Oliphant literature suffers in many fields of activity a serious loss, for as novelist, historian, critic, and biographical writer she has won a high and distinctive place in the literary annals of the period. Her versatility, while it never lowered the character of her work, has been to the critics a marvel, since there was hardly a department of letters in which she did not shine, and her literary output, when we consider its worth as well as its range, is remarkable.

To the general reader, Mrs. Oliphant is perhaps best known as a writer of fiction, and that of the thoroughly wholesome class, whose merit it is to be bright and entertaining without being either didactic or sensational. As a novelist, her rank is admittedly next to George Eliot, in the latter's earlier years, when we had "Adam Bede," "Silas Marner," and "Scenes of Clerical Life," from her observant, healthier and happier pen. She had not quite the same range of erudite learning as the author of "Middlemarch," and "Romola," but what she possessed she better subordinated to her art. There is always truth as well as strength in her work, and a faculty of setting before the reader the most delightful types of character, in their sweet English or Scottish background, such as we have in Mrs. Walford, Rhoda Broughton, or Miss Mulock.

No less successful was Mrs. Oliphant in the domains of literary criticism, history, and biography, as all readily admit who know her Literary History of England, The Makers of Florence, and the memoirs of Edward Irving, St. Francis of Assisi, and Joan of Arc. Where her Scottish predilections as well as her literary sympathies are enlisted—as in the case of Edward Irving, Carlyle, and Thomas Chalmers—we have critical studies of the highest class, and bits of portraiture of the most real and sympathetic character, such as may not elsewhere be found in any but the chief sources of modern biography.

Mrs. Oliphant was born in 1828, of Scottish parents, near Musselburgh, Midlothian, Scotland, and died of cancer at her residence, Wimbledon Common, near London, England, June 25th last. Since 1868 she has enjoyed a civil-list pension from the Crown of £100 sterling, conferred upon her as a recognition of her services to literature.

The first of her numerous works of fiction, which abound, in part, in delightful delineations of Scottish life and character, with other and varied studies of English domestic and social life, appeared in 1849, under the title of "Passages in the Life of Mrs. Margaret Maitland." This won for its author instant success, and she followed it by a number of other stories, always written in easy, unaffected English, and with a scrupulous regard for conventionalities. The best of her early novels are "Adam Graeme of Mossgray" (1852); "Magdalen Hepburn" (1854); "Katie Stewart" (1856); and "The Quiet Heart" (1856). These are characterized by much delicate and quiet humor, with occasional touches of tender pathos. In 1866 her fame as a novelist was much heightened by the publication, in "Blackwood's Magazine," of "The Chronicles of Carlingford," and its pendant, "Salem Chapel," the latter dealing with English dissent. These were followed by a sheaf of novels in a wide range of fiction, in which Mrs. Oliphant interests without descending to sensation or touching forbidden themes. Her later stories, which were most successful, are "The Perpetual Curate" (1864); "Miss Marjoribanks" (1865); "Agnes" (1866); "John" (1868); "The Laird of Norlaw" (1869); "White Ladies" (1871); "The Cuckoo in the Nest" (1892); "The Second Son" (1888); "He That Will Not When He May" (1880); "The Heir Presumptive and the Heir Apparent" (1891); "Kirsteen" (1890); "The Ladies Lindores"

(1883); "The Marriage of Elinor" (1893); "Sir Robert's Fortune" (1895); "The Two Marys" (1896), and "The Ways of Life" (1897), two stories, with a preface, entitled "On the Ebb Tide."

In the preface to "The Ways of Life," Mrs. Oliphant deals wisely, and in view of her death prophetically, with an interesting problem. The work itself, which consists of two slight stories, is marked "by the penetrating insight into average human nature, the humorous detail, and the clean workmanship which Mrs. Oliphant's readers have often enjoyed on a larger scale." The motive of the book "is the pathos that lies in the moment when an author or an artist first discovers that his reputation is on the wane." This should not have troubled Mrs. Oliphant, if she writes from personal experience, since at no period in her career has her reputation stood higher or given more promise of enduring. The utterance, nevertheless, has in it the note of personal wail, as of a sensitive artist bemoaning the approach of age and weariness, with withered laurels, and the goal unreached. The pathos of the situation is touchingly described by the author, as she sets forth the many ways in which the discovery is borne in on the mind, of ambitions unrealized—"in the unbroken silence which greets an orator who was once interrupted by perpetual cheers; in the publishing of a book which drops and is never heard of more; in the unsold pictures; and in the changed accent with which the fickle public pronounces a once favored name."

In addition to her industry as a novelist, Mrs. Oliphant has published the following biographies: "Life of Edward Irving" (1862); "St. Francis of Assisi" (1870); A "Memoir of Count de Montalembert" (1872); with monographs on Sheridan, in the English Men of Letters series, and on "Dante," "Molière and Cervantes" in the series, which she edited, of Foreign Classics for English Readers. In 1888 appeared her "Memoirs of Principal Tulloch;" in 1891, a "Life of Laurence Oliphant;" in 1893, a study of "Thomas Chalmers;" and in 1896, "Joan of Arc." She also wrote a work entitled "Royal Edinburgh" (1890), and a series of antiquarian and art volumes on "The Makers of Florence" (1876); "The Makers of Venice" (1888); and "Jerusalem" (1894). She has also published a work on "The Makers of Modern Rome," and "Historical Sketches of the Reigns of Queen Anne and of George II." In criticism she produced "The Literary History of England from 1790 to 1825" (1882); and a continuation, "The Victorian Age of English Literature" (1892). "A Little Pilgrim" (1882), speculations about the unseen world, though published anonymously, is understood to be from Mrs. Oliphant's pen.

Mrs. Oliphant began to write in 1848, and four years later she formed a literary connection with *Blackwood's Magazine*, which lasted to the close of her life. In the May number of that periodical, the admirable article "'Tis Sixty Years Since," reviewing the progress of Queen Victoria's reign, was from her indefatigable pen, while she had just completed for her friend and publisher, a history of the historic House of Blackwood. From first to last, her literary work, in its varied fields, has been of an unexceptionally high order, always sound, wholesome, and conscientiously well turned out. Never had her work the least taint of the "new woman," nor was there in a single book she wrote aught that a healthy mind could not read and take delight in reading. This, in our age, is something to say for a writer who has been so prolific as Mrs. Oliphant, while her positive qualities, which are many and gracious, will long endear her to the lovers of good books. "But what," observes a critic of her work, "we chiefly love and delight to remember are the natural ease and grace, the sweetness and the sanity of her message. She has given us unstintingly and of her best, and that best is of a standard that comes short, in imaginative quality, in style, and, not least, in just and sound judgment, only of the very highest. Who has suffered harm, who has not been made better and wiser by converse with the creatures of her brain?"

In 1852 Mrs. Oliphant married her cousin, but he died within seven years of the marriage, and her three children all predeceased her. In Eton cemetery, close to Windsor, she, herself, now sleeps by the resting-place of her two sons. At the grave, Queen Victoria, who was both her friend and her admirer, was represented by a member of her personal household.

G. M. A.

IN THE HEART OF THE MOUND BUILDERS' COUNTRY

[ILLUSTRATED]

THE prehistoric people known as the Mound Builders, and the great earth-works which they have left as evidence of their occupation of our country, are embraced as a very vague and misty conception in the consciousness of the average well-informed citizen. The archæologist and the dweller in the vicinity of the mightiest earth-remains realize their importance, and every intelligent tourist who becomes acquainted with the relics of the ancient race is strongly impressed with them, and wonders that works so great have been so little exploited. He reflects that remains far less extensive and interesting in Europe have been made familiar to his mind, while those in our own land have been left in obscurity, so far as popular proclaiming of their character and extent is concerned.

Because the ancient race has been commonly called "Mound Builders," the impression has popularly prevailed that the earth-works left by them are limited to a few small scattered mounds only, and the common conception of the people that built them is correspondingly contracted. Again, confusion and belittlement have ensued from the careless calling of the *tumuli* "Indian mounds," which implies that they were the product of the race we know by that name, and this very considerably detracts from their significance.

As a matter of fact, we have, extending for thousands of miles through the great valley of the Mississippi and along the waters of its tributaries, from the Gulf of Mexico to Lake Superior, and from the Alleghanies to the eastern slope of the Rocky Mountains, a vast system of works, many of which are elaborate and extensive, exhibiting great skill on the part of their builders, and as a whole demonstrating beyond doubt, to the careful student, that they were the work of a distinct race, and a powerful and intelligent one.

Thus the subject becomes invested with a peculiar dignity and importance that grows more and more upon the observing and meditating mind as one realizes that the thousands of grassy mounds which dot the landscape, together with the miles of winding walls in the great enclosures which constitute the ancient earth-remains, contain a message to mankind from a mighty nation which long ago passed behind the great black curtain of oblivion.

The man who once comes to an adequate appreciation of the variety and vast extent of the works by actual observation, must, in some degree — though of course dimly at the best — see the vanished race rise before him and again people the region of the mounds and the mighty circumvallations upon the hills and the plains. In other words, the knowledge that one gains from the earth walls and *tumuli* creates an atmosphere which renders possible the projection of a pale and vague phantasm of the race that once lived here in the flesh. And herein lies the allurement and fascination of the study of the Mounds — a spell which exerts its sway more or less over all, even the least imaginative — who become familiar with the mysterious remains.

It will go far toward establishing at the outset a better understanding of the Mound Builder remains if the reader fixes in his mind this very simple classification :—First of all, that the system of works consists of two great classes, (1) the simple Mounds, or *tumuli*, and (2) enclosures. The former are usually subdivided by students into these classes: (1) Mounds of Sepulture (by far the most numerous); (2) Altar or Sacrificial mounds; (3) Temple or Platform mounds (similar to the *Teocalli* or temple-crowned mounds of Mexico and Central America); (4) Signal mounds, and (5) Effigy mounds, principally occurring in the northwestern States — particularly in Wisconsin and Minnesota. There is also a class of works, peculiar to Michigan, Wisconsin, and the other northwestern States, called "Garden Beds."

The general class of works termed Enclosures are divided, for reasons readily revealing themselves, into (1) Sacred and Miscellaneous Enclosures, and (2) Works of Defense (commonly called "Forts").

A third and entirely distinct class of works are the "Graded Ways," of which, however, there are only a very few examples in the whole country.

The *tumuli* which so profusely dot the landscape in the best portions of Southern Ohio, Indiana, Illinois, Missouri, West Virginia, Kentucky, and, generally speaking, the valley regions of the Ohio and Mississippi rivers, are usually of the simple conical form, much flattened, and varying from a diameter of ten feet and a height of three feet to such great structures as the Grave Creek Mound in West Virginia, the monster of the Ohio Valley, with a height of seventy feet and a diameter of three hundred; or the mammoth Cahokia Mound, on the Illinois side of the Mississippi, below St. Louis, which is the largest mound in the Northern States, and has a height of more than one hundred feet. Nine out of ten of the common mounds are sepulchral or burial mounds, as is evidenced by the finding of human remains at their bases, but a few cover altars on which sacrificial fires once burned. That others were primarily designed as the places from which signals might be made is clearly revealed by a little study.

Of the enclosures, the class that is by far the most numerous, is that denominated sacred enclosures, which term was long years ago applied to and still remains by common consent the general appellation of all those works, usually lying in the valleys and embodying more or less regularity of structure, or the combination of regular forms, as of the circle and square. Of course their use is largely conjectural, and the term "sacred enclosures," therefore, more or less fanciful, and yet not entirely without a rational basis. They may have been—and doubtless were—the general assembly places of the populace, and devoted to various functions and occasions; yet there is evidence that the religious purpose was a common one, and hence the term "Sacred Enclosures" is most satisfactory and definitive.

It is obvious, as, almost without exception, the works of this class occur in the immediate valleys, that they were not primarily designed as places of defense, though they could, and doubtless often did, serve that end in emergency, and their substantial earth walls, from six to thirty feet in height, especially when surmounted by palisades, of which there is frequent evidence, would form no mean barrier against an enemy.

It is just as obvious that the other class of enclosures were designed primarily and principally for works of defense. The so-called "Forts" were formidable fastnesses. In fact, it would appear that they were almost absolutely impregnable to any assaults that could have been made upon them in the ancient days. Briefly described, they are walled hills—forts upon precipice tops—the embankments in these usually being formed of stone instead of earth, and carried around the comparatively level summits of the hills just at their edges. They often enclose areas of isolated hill-tops amounting to forty, fifty or even more than a hundred acres, and some of them, it is easy to be seen, might have afforded a place of refuge and defense to tens of thousands of people through a long siege. Such was the vantage that their location and construction afforded that each man at the walls of these hill fortresses could have held a score or a hundred assailants in check.

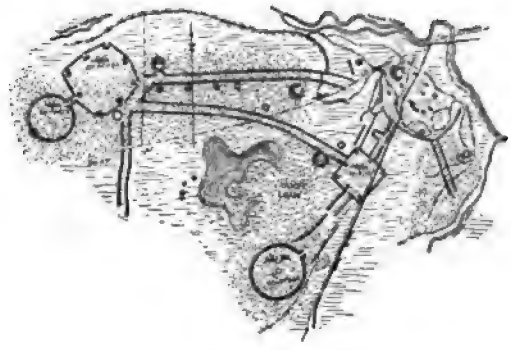
The great size and number of these defensive works and of the still more numerous and extensive enclosures commonly called "sacred," especially in such regions as that of the Scioto and Miami Valleys in Ohio, is proof positive that it was a very large population that resided there and reared them. Indeed, it seems not improbable that in these immediate localities the country was as fully peopled in the ancient time as it is to-day. The magnitude and profusion of the works, too, afford a convincing proof of the dominance of a strong government, of a remarkable fixedness of purpose, and of a long occupation of the country, for without the existence of those conditions it is inconceivable that such vast public works could have been constructed. So, too, the conviction arises irresistibly that there was among the people at least a sufficiently high degree of civilization to render them an agricultural race, for it is impossible that such great masses of men as must have toiled to rear the many miles of earth-embankments and the countless thousands of mounds could have subsisted on the products of the chase. The mere fact that a population so large and advanced existed here, being thus attested, many other ideas concern-

ing the ancient race follow by process of natural inference.

There seems reason to believe that the seat of empire of the ancient people was in southern central Ohio. From the frequency with which the mounds and larger works occur in the southern portion of that State and of Illinois, it is evident that these two regions were the most densely populated by the Mound Builders; and as between the two, the far greater number of *tumuli* and the predominance of extensive works in the Ohio field, points to that as the region of densest population, inferentially it was the centre of government — the true heart of the Mound Builder country.

For the reason here suggested and also because the writer is best acquainted with the works in the Ohio field, having examined personally many of the more elaborate ones there, he will dwell chiefly upon the remains in that region, as illustrating the nature and achievements of the lost people. It is well enough to say, however, at the outstart, that while this is generally regarded as the richest region for research in this department of archæology, the largest mound of all in the country, the great Cahokia tumulus, is in Illinois, and the next largest, the almost equally famous Grave Creek Mound, is in West Virginia (though upon the Ohio river). These facts while not weakening the original statement attest the wide spreading of the ancient population and enforce attention to the fact that while the greatest numerical strength of the race was very probably in the valleys of Southern Ohio, there were also bodies of the same people, by no means insignificant in numbers, inhabiting districts remote from there. And this idea is further impressed by the circumstance that while the Scioto Valley (central southern Ohio) is certainly of all localities in the northern states, the richest in great enclosures of embankments, the most immense enclosure of all known, is far away from that region, in a northeasterly direction (near Newark, Licking County, Ohio).

Having thus conveyed some idea of the relative richness of the Ohio archæological field, there remains the task of exhibiting something of the actual numerical wealth of the works, together with some details as to the more important examples of the several classes. To obtain an adequate idea of the vast profusion of the remains a few figures will be of service. Forty odd years ago Squier and Davis, the first able and thorough investigators of this archæological



NEWARK WORK, LICKING COUNTY, OHIO.

field, affirmed that in the State of Ohio alone, the number of *tumuli* was safely estimated at 10,000 and the number of enclosures at from 1,000 to 1,500. Recent computations of the number make them very much larger. When one reflects that each of the latter class of works, excepting perhaps very small ones, in groups, must represent the site of a village or organized settlement, strong evidence is adduced in support of the theory that the country was occupied by a very large population.

This class of works is most numerous along the larger streams tributary to the Ohio and upon the latter waterway itself, but usually, it is noticeable, at those points where it receives the waters of its affluents. The Scioto and the two Miamis seem to have been the most favored valleys, and there existed the seats of the densest population. Although the earth-remains, large and small, are scattered more or less numerously throughout the State (and in the contiguous territory of West Virginia and Pennsylvania where the Allegheny river marks their eastern boundary) it is worthy of remark that seven-tenths of the whole number and all of the larger works are in the southern half of the State. A map showing all of the works would very clearly indicate that in this general region the prehistoric population was located with some relation to the advantages of the "beautiful river," precisely as farther west the Mississippi would appear the dominating geographical feature in the grouping of the people. But while the general showing of such a map as has been alluded to,

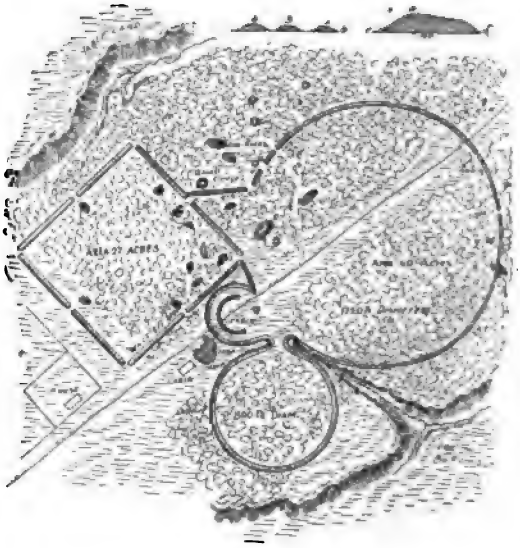
would be as indicated, there would be also revealed very great differences in the relative profusion of works and density of population in various portions of the Ohio basin (and as well in that of the Mississippi).

Most crowded of all at present with earth-remains, as it was of old with the toiling thousands of the mysterious race who reared them, would appear to be the fertile valley of the famous and picturesque Scioto, which divides southern Ohio by a north and south line from above Columbus to the Ohio river at Portsmouth. Adown this lovely valley, within an area one hundred miles in length and a score of miles in breadth, it is safe to say that there are nearly two thousand separate works of the Mound Builders, large and small. In Ross county (which includes Chillicothe, near which town the most important "find" of sepultured remains known in the history of Ohio archæology was recently made, at "Copper Cross Mound") there are not far from five hundred mounds and about one hundred enclosures. That here must have been the ancient seat of empire is an almost irresistible conclusion.

A section of twelve miles of this valley, embracing as its central point the city of Chillicothe, exhibits ten groups of large works, four of which have two and a half miles of embankment each, two others enclosing an area of one hundred acres each, while the remaining ones are scarcely inferior in size. Paint Creek, an affluent of the Scioto at Chillicothe, and its charming valley, walled by bold bluffs, was seemingly as fully appreciated by the ancient people as the larger basin was. A section of six miles along its course reveals three works about equal in size to those on the Scioto and three lesser ones. The face of the country round about and far away, upland as well as valley, is dotted with the little conical mounds or *tumuli*, which are, throughout this region, so common as to excite comparatively little interest save by their large aggregate, or where peculiar features are presented.

Further up the Scioto are other extensive works. At Circleville, Pickaway county, was the great circle from which the town takes its name, and in this case the name is absolutely all that is left of one of the most remarkable of the Mound Builders' works, for the people who settled there, with a zeal worthy of a better cause, swept the peculiarly massive and regular walls from the plain as effectually as a school boy may erase from his slate a problem which he cannot solve.

To the southward also, in Pike county, is the famous "graded way" at Piketon, a rare type of this quite scarce work in which heavy parallel enbankments flank a broad, beautifully graded avenue sloping to the river.

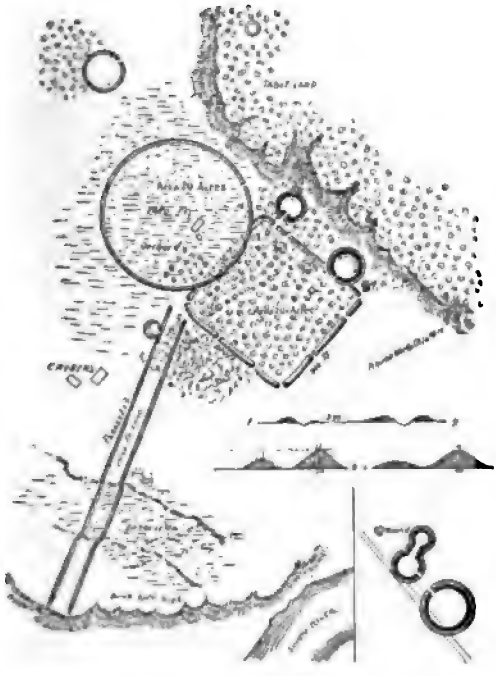


ANCIENT WORK, LIBERTY CO., O.

"The Liberty Works," as they are commonly called, are among the larger enclosures near Chillicothe and present the oft-recurring combination of the circle and the square of which another Scioto valley example is afforded by the Hopetown works, north of Chillicothe. The larger circle of the Liberty enclosure is seventeen hundred feet in diameter, or very nearly a third of a mile, and the smaller circle is eight hundred feet in diameter. The former encloses an area of forty acres, and the adjoining square, measuring one thousand and fifty feet, encloses an area of twenty-seven acres. There are several small mounds in and about this immense work and one large tumulus, oval in form, about one hundred and fifty feet in length by twenty in height. The walls of this work are not as heavy in proportion to their length as are those of some others; but save in this respect it is a fairly representative work of the larger class.

The Hopetown works exhibit far more

massive walls, those of one of the enclosures being even at the present day fully twelve feet high, and broad enough upon the crest to accommodate a horse and carriage as easily as does the average country road. Here have been discovered in the top of the embankments traces of palings which once surmounted them, and at either side of the broad entrances were found traces of massive timbers, which indicated that the gaps had once been closed by some form of gates or barricades. These works present a combination of several forms of enclosure, the principal figures being the circle and a peculiar octagon so compressed as



HOPETOWN (O.) WORKS.

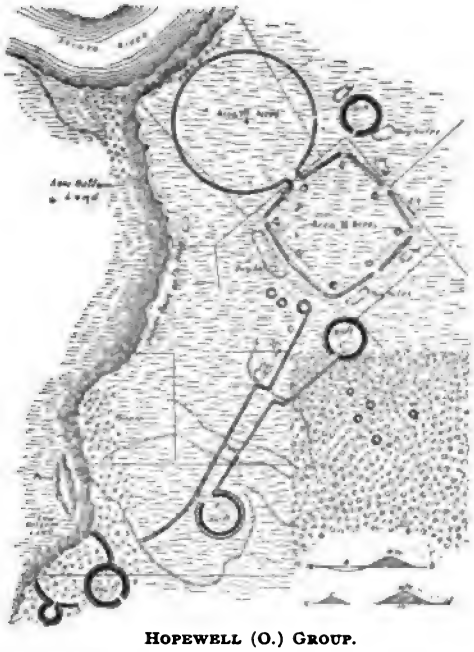
to be easily mistaken for a square, and low but long extending parallel walls stretching across the level bottom lands toward the river, but terminating at the first terrace, where perhaps the river flowed when they were constructed centuries ago.

The plentifulness and variety of these works in the valley of the Scioto, together with the vastness of some of them, make it seem quite natural that this should have been the locality of the "find" of the most important and imposing mortuary remains ever discovered among the relics of the ancient race; and this recent remarkable unearthing supplies cumulative evidence to the theory that this was indeed the seat of empire of the Mound Builders.

The discovery alluded to was made by Warren K. Moorehead, working under the auspices of Prof. F. W. Putnam of Harvard College. A vast number of mounds have been excavated in the past half-century in various parts of the Mound Builders' country, and hundreds, perhaps thousands, of skeletons have been exhumed, together with a great variety of implements and ornaments, principally of stone, and also some of copper; but the distinguishing features of this exhumation were the evidences of unusual pomp of sepulture so far surpassing all others that it would unequivocally indicate that this was the tomb of the most exalted personage who had existed among the prehistoric people, or at least of one who was of greater prestige than any of those whose graves have been laid bare by investigators. These circumstances, together with the finding among an unprecedented wealth of copper objects, remarkably fine in workmanship, of several peculiar crosses, made the excavation of the great Effigy Mound in the Hopewell group, on Paint Creek, near Chillicothe, an epochal discovery in American archæology. The Swatiska cross, as it is called, it should be observed, is a distinctively Oriental form, and seemingly throws a faint gleam of light on the antecedents of the mysterious Mound Builder race.

The Hopewell group of works, the scene of this discovery, which, more than any other, has interested the students of the mounds, consisted of an enclosure, the embankments of which extended nearly two miles, several lesser enclosures and a group of twenty-six mounds. It was in the largest of these, the now famous Effigy or "Copper Cross Mound"—bearing a rude resemblance to the human trunk and measuring five hundred by two hundred and ten feet, with a height of twenty-three feet—that the bones of the distinguished ancient had their thousand years, at least, of stately sepulture. The skeleton was one of a dozen or more, but the distinction which had been accorded to the man, who once had animated these crumbling bones, was very plainly indicated by the profusion of ornament and insignia with which the body had been invested when laid to rest.

Upon the skull, surmounting a copper helmet, were branching antlers, well-fashioned, of the same metal, and upon the breast and back were plates of copper



HOPEWELL (O.) GROUP.

which had formed, together with the helmet, a rude armor. The body had been covered with a tunic or skirt of coarse cloth, and the neck, arms, and ankles were encircled with copper bracelets, beads of pearl and shell and bear's teeth. Besides these was an immense deposit of objects, for the most part common to the sepulchral mounds, but far exceeding in size and variety, and also in the plentifulness of the copper ornaments and implements, all other finds. Among the latter was an enormous copper axe, weighing thirty-eight pounds, and numerous objects supposed to have significance as totems, as well as the crosses already mentioned. There were over seven thousand flint implements and about twenty-five thousand pearl and shell beads. Such, in brief, was the "great find" made in the region richest in Mound Builder remains of all in the valleys of the Ohio and Mississippi.

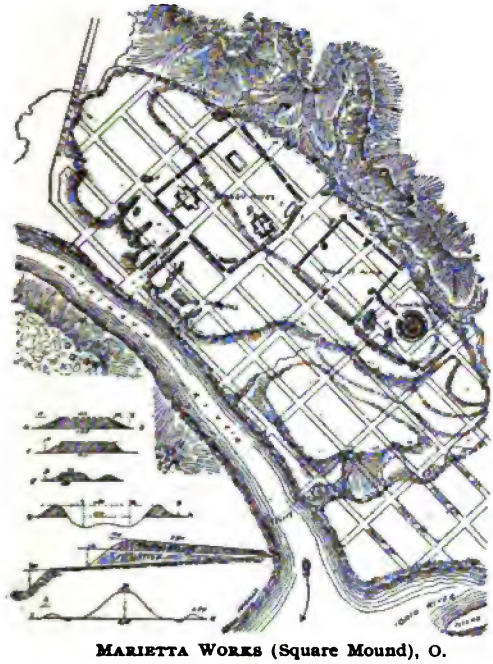
There are remarkable remains in other localities of Ohio, and the most unique of all in some respects are to be found at Marietta, the site of the first settlement in the State by the present race, which — as the Indians also long maintained a town there — is the third family of mankind which has exhibited a marked preference for the spot. The greater part of the plain, at the confluence of the Muskingum and Ohio, on which the present town stands, was originally covered with a large rectangular enclosure and other works. The early settlers here, however, took measures for the preservation of many of the works, and among the remaining ones now carefully protected are elevated squares, truncated pyramids or platforms of earth with graded approaches or ascents, in some cases recessed, in some projecting. These are almost unique in the north, but very common in Mexico and Central America, where they are known as *teocalli* and form the supporting structures of great temples. It is a perfectly reasonable conjecture that they also did in this locality, but that here, the surmounting temples being of wood or other perishable material, instead of adobe or stone, as at the south, have long since decayed.

A "graded way" is also preserved at Marietta, and it is the best example of this very rare class of works in the whole country, being much larger than the one at Piketon on the Scioto. It is a broad, perfectly graded incline, cut down like a street through the high plain to the river's edge (the Muskingum). It measures six hundred and eighty feet in length by one hundred and fifty feet in breadth. What could this, and the few other graded ways in existence, have been used for by the Mound Builders, if

ANCIENT WORKS, MARIETTA, O.

not as huge boat or raft launches? These works occur only contiguous to the large water-courses, near which also are most of the large enclosures and mounds, indicating that their builders had more than a merely accidental pre-

dilection for proximity to navigable streams. And why, if they did not make a practical use of them?

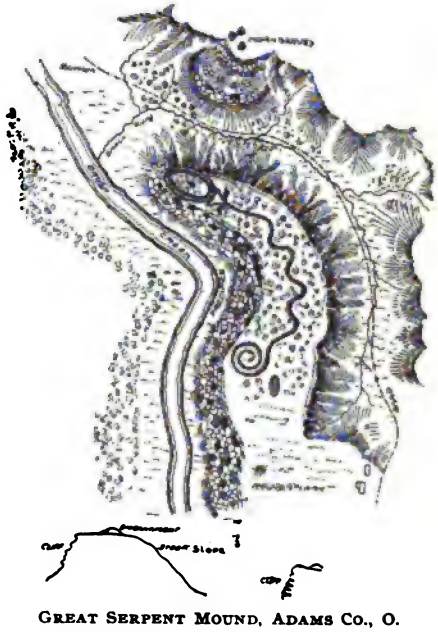


MARIETTA WORKS (Square Mound), O.

A large conical mound thirty feet high, in the present burying ground at Marietta, is one of the best specimens of *tumuli* in the Northern States and is unique in being surrounded by an enbankment and fosse. This mound was one of the first excavated anywhere in the country and had for its explorer, in 1788, no less a personage than the famous Doctor Manasseh Cutler of Massachusetts (agent of the Ohio company, which formed the settlement here), and author of the "Ordinance of Freedom." The "find" which was unimportant — a single skeleton merely, was discovered about midway between the apex and base of the tumulus, and it is probable that had the excavation been pushed to the base a more interesting discovery would have been made. It is possible that there still exists there, uninvaded, a sepulchral chamber, for many of the larger mounds have been found to contain two, in vertical line below the apex, among such being the great mound on the Ohio, at the mouth of Grave Creek, West Virginia.

The early settlers of Marietta, who were nothing if not classical, gave Greek and Latin names to the ancient works, by which they are known locally to the present day, as the *Capitolium* and *Quadranaou*, applied to the elevated squares, and *Sacra Via*, to the graded way.

Of the "Effigy Mounds," the chief field is southern Wisconsin, and some contiguous territory in the northwest, but there are several in Ohio, and one of the greatest of all occurs there — the famous "great serpent mound" of Adams county. It is a giant *basso relievo* of earth forming a serpent, lying extended in graceful curves with its tail in a triple coil, upon the summit of a hill near Brush Creek. Upwards of a thousand feet in length, the embankment comprising the body being five feet in height, with a base at the middle of thirty feet, diminishing very nicely and naturally towards the head and tail, this colossal representation strikes one with something very akin to awe, which is not lessened by the significance that in all of the remains of the ancient Mexican and Central American races, the serpent is shown to have been, in the minds of their builders, the symbol of life and power. In the case of the Adams county figure, the gigantic reptile has its vast jaws extended, and holds between them the form of



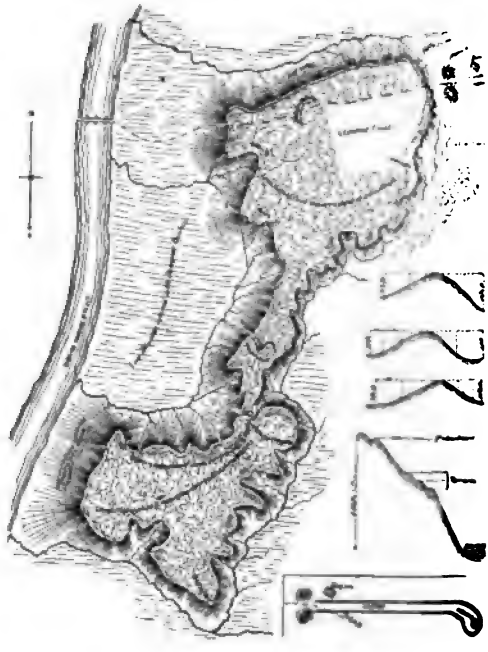
GREAT SERPENT MOUND, ADAMS CO., O.

an egg, which, of course, recalls the ancient serpent and egg myth.

This work, which has been long known

and visited by archæologists from the whole country, is well preserved, and there is assurance that it will continue to be, for the ground on which it lies is now the property of Harvard College. For many years this work enjoyed the distinction if not of being positively unique, at least of being the largest of the effigy remains in Ohio, or perhaps in the entire country; but lately a far larger serpent has been traced near Morrow, in Warren county, in the same quarter of the State as Adams county — the southwestern. Portions of this work have, unfortunately, been destroyed, but a corps of men who have investigated it under the orders of Prof. Putnam, of Harvard, have determined that the body of the monster serpent extended its undulating lines for a distance of at least nineteen hundred feet. The greater part of the body of this serpent is enveloped in the forest, and the massive head, which chanced to lie in a field given over to the process of "clearing," and the plough has been obliterated. On the rounded body of the serpent are growing massive trees, which are centuries old, while the rotted remains of equally large ones lie among them, and the whole surface of the region is covered to the depth of a foot or more with leaf-mould and loam, the product of centuries of decay since the great serpent was modelled upon the face of the earth.

Of the Works of Defense, which form a very interesting class, of which the very best examples are in the Ohio field, not much has yet been said. Attesting less the civilization of the Mound Builders than their warlike character and that foresightedness, prudence and patience, which enabled them to make elaborate and effective preparation for their self-preservation, these works cannot be ignored by those who would form a proper conception of the people who once held possession of the great valleys. The most notable examples of this class of works are a fortified hill in Butler county, with quite intricately and ingeniously defended entrances; that heretofore alluded to on Paint Creek; "Fort Hill," in Highland county, in which an area of forty-eight acres on an isolated elevation, rising ruggedly, precipitously from Brush Creek, is enclosed by an embankment of earth and stone; and "Fort Ancient," in Warren county, in which is shown distinctive evidence of the sagacity and skill of the people who were its builders, and who, doubtless, were more than once besieged within its walls. It is scarcely probable that the people who built this class of works resided permanently within them. Near most of them others are to be traced, of the more regular and carefully built class, commonly called sacred enclosures.



FORT HILL, HIGHLAND CO., O.

This is notably the case at "Fort Hill," where the remains of a village are to be seen in the valley near at hand, the usual abode, it is conjectured, of the colony which fortified the hill crest as a place of ready refuge in emergency.

Greatest of all the groups of works in Ohio, and presenting in the elements which constitute it, examples of almost every class or division of the ancient remains, is the system near Newark, Licking county. When this portion of the State was first settled the fact was revealed to the astonished pioneers, that a former race had thought so well of the then forest-grown country, that in a dim, uncertain age, antedating the hoariest monarch of that forest, they had toiled there in the building of enclosures which embraced twelve miles of walls, besides numerous detached works and *tumuli*. Of these, the most magnificent, extensive and intricate of the Mound Builders'

works, not only in Ohio but in the whole region of the Northern States, a considerable portion have been preserved and are the Mecca of hundreds of archæological pilgrimages. The works occupy an area of two miles square and originally pretty thoroughly covered that expanse. The walls — some of them thirty-five feet in height, but many of them of far less altitude — and their labyrinthine character, the strange forms of the "effigy" mounds — as the "eagle" and the "alligator," the unmistakable evidences of colossal labor expended upon them, the skill in design and accuracy of measurements and proportions, impress even the most stolid observer with the dignity of the race that reared them and with their numerical extent. Here as truly as at Palenque or Uxmal was a forest-buried city, vast, mysterious, and, as ever, where antiquity and insoluble mystery confront the beholder, awe-compelling. To construct such works, even to-day with the aid of horse-power and labor-enhancing implements, would require the employment for a number of years of an army of many thousands of men.

FORT ANCIENT, WARREN CO., O.

But, in dwelling upon the fascinating profusion and variety and vastness of the Mound Builder remains in Ohio, I must not forget that there are other regions of exceeding richness, and special districts which closely rival any in the field I have been considering. And this fact — the existence of such rich fields widely remote from each other — is perhaps more convincingly assertive than any other of the immensity as regard numbers of the ancient race.

As a close second in the plentifulness and interesting character of the remains to those in the Scioto Valley, is a stretch of the Illinois bottom land extending along the Mississippi from East St. Louis southward. The site of St. Louis itself, on the other side of the river, was originally literally covered with mounds, while on what is called the "American bottom," on the Illinois side, are over two hundred within a comparatively small territory. In one county alone — Mercer — the *tumuli* and other earth-structures are estimated, by conservative explorers, to number at least one thousand.

The monster mound of the whole northern or United States region, the great Cahokia Mound, as it is called, is in this district — Madison county, Illinois. It stands in the midst of a group of sixty other *tumuli* and is a Temple Mound — one of the true *teocalli* — its features being in close analogy with those of the truncated pyramids on which the temples of Mexico were situated; and there can be little doubt that it once bore upon its lofty summit a great edifice similar to, but probably less magnificent than, those in which the ancient priesthood held their solemn and sanguinary religious ceremonials.

Cahokia Mound, which is exceedingly well-preserved — and the owner of which wishes to dispose of it to the government, or to other custodians, who will guarantee its future preservation—is a commanding elevation, upwards of a hundred feet high, and extends in the form of a parallelogram, the sides of which measure seven hundred and five hundred feet, respectively. The top of the great truncated pyramid is flat, and divided into two parts, the northern end being a few feet higher than the southern, and the two surfaces having together an area of about two hundred by four hundred and fifty feet, containing one and one half acres. Upon the southern end, about thirty feet above the base, is a terrace, or apron, containing about two acres of

ground, and upon the western side, at an elevation of sixty feet, or thereabouts, is another broad terrace, though of less extent than the former. In the middle of the lower and larger terrace at the base of the mound, is a projection supposed to be the remains of a graded ascent from the plain. The base of this colossus of the earth-structures covers sixteen acres of ground, and merely in the matter of superficial area Cahokia is said to be the largest pyramid in the world, surpassing those of Egypt.

The immense works which have here been briefly described, with thousands more like them, and some scarcely inferior in size, together with the innumerable *tumuli* that dot the valleys of the whole Mississippi basin, incontestably prove that a vast race dwelt here. The character of the works themselves, the profusion of implements and ornaments in stone, flint and copper, the gorgets, bracelets, amulets, pipes, knives, axes, notably the pottery, and more than all else, the crumbling skeletons themselves, bear testimony to the fact that this race was one entirely distinct from the American Indians. This testimony is supported by divers other significant facts, among which is the almost entire absence of tradition among the Indians linking them with the people who built the mounds. The *Lenni Lenape* or Delaware Indians, indeed, as an exception had a legend of the Mound Builders, but it distinctly disavowed the descent of their nation from them and asserted that they were a distinct and powerful people, through whose land they, the Delawares, had passed ages ago, after fighing a mighty battle with them. They called this people the *Allegewi*, which name combined with *hanne* (*stream*) has come by process of linguistic evolution Allegheny, the name of the river which marks the eastern limit of the Mound Builder country.

Whence came and whither vanished this mysterious race,—this mighty current of the blood of the earth that seemingly only emerged from obscurity to flow into oblivion? A little light has been thrown upon these problems by the patient study of a few scholars. The consensus of opinion among the most thorough seems to be, that the Mound Builders were of Oriental or Asiatic origin, and that they reached America by way of its western shore. The recent find near Chillicothe is regarded by archæologists as contributing a fragment of cumulative evidence to the mass of minute data supporting this theory of origin.

As to the destiny of the race, or, rather, the direction of its passing from the field we have been reviewing, it seems highly irrational, from a study of the earth-works, the mortuary remains entombed in them, and the various art-objects which they enclose, to form any other opinion than that the nation gradually pushed its way down the valley of the Mississippi, and eventually spread into Mexico, very likely occupying the whole stretch of country from Lake Superior to the land of the Montezumas. Simultaneously, it is thought, that for a considerable period they held all this country, relinquishing the northern portions of it reluctantly, and only under pressure of an enemy, against whom the great works of defense we have been considering were raised.

The character of the earth-remains* denotes a constant development as one follows them southward, while the rude arts which the people practised, as for instance that of making pottery, are shown by the relics unearthed to have undergone a gradual but marked improvement in proportion to the distance southward at which they are found. So, too, do the crania found in the mound sepulchres give evidence of a constant growth of the Mound Builder intellectually, indicating a considerable betterment of type as the race journeyed towards its destiny in Mexico.

Perhaps, some day, the elaborate and accurately presented hieroglyphics, and the masses of information preserved in such great works as Lord Kingsborough's (which cost its author besides his life, three hundred thousand dollars), may be the means, in the hands of other scholars and writers on Mexican antiquities of revealing with definiteness the secret of the Mound Builders' destiny and much of their history.

But in the meantime there is not wanting

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* The writer of this paper acknowledges his indebtedness for the drawings which illustrate the article to Squier and Davis's "Ancient Monuments of the Mississippi Valley," one of the important publications of the Smithsonian Institution.

evidence from the side of Mexican history,— though incomplete and necessarily far from satisfactory,—that the people who, in the northern United States, and down the valley of the Father of Waters, reared the comparatively humble and yet massive earth-remains, performed a prouder work and reached a higher civilization, in the south, as a component part of the ancient *Maya* race. The fragment which, though one of the latest, was one of the strongest, amalgamated in the composite *Maya* people, was known as the *Nahua* nation, and there is evidence in their own history, as handed down through Mexican and Spanish authorities, that they came from the North, where they long had dwelt — from a land which they called *Hue hue Tlapalan.*

That the Mound Builders were the *Nahuas* and the land of their long sojourn, the misty, traditional *Hue hue Tlapalan* was the region of the upper Mississippi and the Ohio — the region in which their multitudinous monuments still remain to excite the wonder of a greater race — is pretty effectually argued by several students of American antiquities. One of the ablest authors who takes this view of the subject deduces from what has come down to our era and race of *Maya* history that the era of the exodus of the people from the North, or rather of the appearance of the *Nahuas* in Mexico, was the year A. D. 241, or sixteen and a half centuries ago.

If the Mound Builders and the *Nahuas* were identical, then we find that the people who built the mounds and fortifications of the North, and who then had in all probability no written language, finally became an integral part of a great nation which reared what are now the most splendid ruins of Mexico, left innumerable hieroglyphical writings, and who, in the time of Cortez, were found to have approximated the true length of the year within two minutes and nine seconds, thus rivalling the learned astronomers of the Orient, and that, too, while the nation of the Conqueror and other Europeans were following a system of time measurement which had placed them nearly ten days in error.

ALFRED MATHEWS.

SOME TYPES OF MEN OF SELF CULTURE:

VIII.— WASHINGTON IRVING*

FORTY years have now elapsed since Washington Irving completed, with his ebbing life, the edifice of his literary reputation, by the publication of the faithful and patriotic study of the "Life of Washington." His fame as a writer, we all know, however, does not rest upon that product of his latter-day pen. It rests upon the achievements of a period, forty years earlier, when the world with him was young, and he revelled in the fresh joyousness and bubbling humor of his untethered genius. To Irving, the era which saw the "Knickerbocker History of New York" and the "Sketch Book" first given to the world was one of whimsical fancies and gay indolence,— an era in which the heart was more active than the brain, and when the imagination was not subordinated to the judgment. It was the adolescent stage in American letters, when literature was fain to imp its wing for flight, but had hardly confidence to make the required effort. The modesty of Irving's aim when he began to write, and thereby create a new interest besides politics in the youthful Republic, is thus indicated in a sentence. "My writings," he said, "may appear light and trifling in our country of philosophers and politicians; but if they possess merit in the class of literature to which they belong, it is all to which I aspire." Considering his scanty and fitful education, and above all his delicate health, one may express surprise that he was so confident and successful. And yet, if his body was in youth feeble, he had from the first a thoroughly healthy, though never vigorous, mind. In creative gifts he was gracefully rather than richly endowed, and the canvas upon which he worked was that of the sketcher rather than the

* See the biography of the author, in the Encyclopædia Britannica, Vol. XIII., p. 372.

painter. His optimism and cheery humor threw their charming lights on the picture, while a delightful instinct for art, coupled with minute observation and a facile power of drawing character, gave substance as well as brilliance to his work. Since Irving's day, the barque of American letters has made many, distant, and sometimes stormy, voyages; but the intellectual craft in which "Geoffrey Crayon" first set sail carried him,— to use the apt figure of a critic, — only "among the Happy Isles, and always on a Summer Sea."

We have said that Irving's education was scanty, and in view of that fact, and of what he was subsequently to achieve, we have to enrol him in the goodly company of the self-made and self-cultured men to whom the world owes much. The environment of his youth, together with a constitutional predisposition to idleness, were little favorable to literary activity. Society in his day was by no means intellectual. Commerce and the noisy game of politics, varied later on by the distractions of war, were the engrossing pursuits. For years the youth seems to have been but a dreamer and rambler, his physical weakness disabling him from methodical study or any serious preparation for life's work. His natural intelligence, amiability, and pleasant manners opened society's shrines to him, which he eagerly entered, as being more inviting than his father's kindly but demure home. Owing to his delicate health, his desultory mode of life was acquiesced in by his elder brothers, who were engaged in business, and when he came of age, in 1804, they sent him to recruit in Europe. Previous to his going abroad, Irving gave little promise of the career which he was afterwards to follow, save by such indications of budding authorship as appeared in a newspaper, established by his brother Peter. To this journal he contributed a series of letters, modelled upon those of Steele in the "Tatler," and signed by Jonathan Oldstyle.

After two years' idle sojourn in Europe, Irving returned to New York, where he was admitted to the bar; but he speedily abandoned law for literature, and the seductions of society. The attractions of the latter had been increased by his residence abroad, and by the ready manner in which society's doors were opened to one who was now even more willing than of yore to be made of and caressed. It was at this period that the youth had his one, and, as it proved (though he was admirer of women all his days), his only bit of romance. Alas, it had an early and pitiful sequel, for the young lady (Matilda Hoffman), who had kindled the passion in his breast, died in her eighteenth year, and the blow was a crushing one to Irving. It served, however, to incline the youth to take life more seriously. He now sought to pursue a purely literary career, and in his resolve he was fostered by his brother William and by James K. Paulding, his brother-in-law, who were then issuing a semi-monthly miscellany, called "Salmagundi." The periodical was short-lived, and though it had considerable social repute, it had little literary distinction, beyond that which connected it with other and later imitations of Addison's "Spectator" and Goldsmith's "Citizen of the World."

Irving's habit of rambling and studying character, and his appreciation of historical surroundings, enabled him, in his excursions about the metropolis and the waterways of the Hudson, to gather a mass of material illustrative of the old Dutch life of the place, which he now proceeded to work up into a "History of New York." His initial purpose in projecting the work was to write a satire upon an elaborate piece of historical pedantry which had recently appeared, representing a picture of New York; but as the idea grew upon him and his humor fell to work upon it, he changed the plan of the book and produced the inimitable burlesque we now know, compiled, as he modestly put it, by "Diedrich Knickerbocker." The work appeared in 1809, and the merriment its rollicking humor created was immediate and widespread. But its whimsicalities were not its only merit: below the surface its delightful satire was soon detected, while the student of Manhattan's early social life enjoyed the solid history that lay embedded in its jocund mirth. Nor was the droll presentation of Dutch colonial character appreciated alone in this country: in England the work was quickly esteemed a masterpiece of humor, and we are told that Sir Walter Scott, who had an immense liking for Washington Irving and later on found him a London publisher, used to read the history aloud to

his family amid peals of laughter. Scott admitted that the quaint and novel production had many touches that reminded him of Laurence Sterne, while the style of the narrative resembled that of Dean Swift. In this country, the vogue of the work has been constant, while it possesses qualities as a distinctively national effusion that give its author an enduring place in our literary Walhalla. Socially, even, its power has been great, since it has raised the denizens of New York to a caste rank and given many an old Knickerbocker family a quasi-patent of nobility.

Despite the encouragement the now full-fledged author received by the publication of the Knickerbocker History, he seems to have refrained even now from committing himself seriously to a literary career. One reason for this was his continued fondness for society, another was his absorption in the cares of a hardware business conducted by his brothers, in which he became a partner, but without being drawn to it by any love of trade. The house, it appears, had connections on the other side of the Atlantic, and to look after its interests there Washington Irving was dispatched at the close of the War of 1812–15. The embroilment of the two countries seriously crippled the operations of the firm, and in 1818 a financial crisis occurred which brought disaster to the house. The young author, who had hitherto been the indulged pride of the family, now became its chief mainstay and support. The spur of want pricked him to practical purpose, for we find him settling down in London to various literary tasks and to a lengthened residence abroad, spent partly in England and partly in Spain. The first and choice fruit of Irving's devotion to his pen appeared in this country in 1819–20, in the serial issues of the "Sketch Book," which instantly made a sensation and met with an enthusiastic reception in London, thanks to Scott's recommendation of a publisher. There was much in the collected volume, both in subject-matter and style, to attract the interest of the English, but the sympathetic beauty of the description of Westminster Abbey and the delightful account of an English Christmas were eclipsed by the Dutch material in the book, and especially by the exquisite romantic sketches of "Rip Van Winkle" and the "Legend of Sleepy Hollow." It was on the strength of this book and the "Tales of a Traveller," perhaps Irving's most characteristic productions, that led Thackeray to speak of their author "as the first ambassador whom the New World of letters sent to the Old."

But Irving by his genius was not only to make classic the banks of the Hudson. He was also to popularize for his countrymen and the English-speaking race the land of the Spaniard and the Moor. His work in England, besides launching a London edition of the "Sketch Book" and making acquaintance with a large and interesting circle of English men of letters, included "Bracebridge Hall" and "Tales of a Traveller," the latter the result of several years of delightful saunterings in the United Kingdom and on the European continent. Now (1826), when in his thirty-sixth year, he extended the area of his wanderings to Spain and took up his abode at Madrid, in the house of the American consul. Here, within the next three years, he earned by his pen, from his English publishers alone, the sum of £6,000 for the copyright of the four works which then engaged his attention. These were "The Alhambra," "Chronicles of the Conquest of Granada," "Legends of the Conquest of Spain," and the "Life and Voyages of Columbus." Of the works of this fruitful era, the Columbus biography has for his countrymen perhaps the greatest interest, and the gathering and verifying of its materials involved immense labor. Though the Life somewhat idealizes Columbus, it has the merit of substantial accuracy, while it is written on grand lines and with enthusiasm as well as sympathy. The other works appealed keenly to Irving's imagination, and in them we have a series of vivid and picturesque studies, enriched by the skill of the literary artist. To English writers, the field at the period was a virgin as well as an attractive one, and great was Irving's service in giving to the world such a charming group of histories dealing with the chivalrous episodes and romantic incidents in the annals of Spain.

In 1829, the appointment of Secretary of Legation at the Court of St. James withdrew our author to London, where he was received with the honors and dis-

tinction which he had now fully earned. But he cared little for politics, and his head being full of literary projects he retired from the Legation, and in the next year (1832), after seventeen years' absence, returned to his home. At New York he was given a public banquet, and the health of the "Dutch Herodotus" was toasted with hearty honors. After the delirium of receptions had somewhat passed, the literary wanderer, to whom the sweets of a quiet rural life were always welcome, cast about him for a home. This he found, close to his old Sleepy Hollow haunt, in a pretty Dutch cottage at Tarrytown, close by the Hudson which his genius had enriched.

Here, at Sunnyside, with the exception of two absences — one on a visit to the West, chronicled in "A Tour on the Prairies," and the other on an ambassadorial mission to Madrid — he spent the late noon and evening of his days. To his western excursion across the continent, we owe two other works besides "A Tour on the Prairies" —viz.: the adventures (chiefly in the Rockies) of "Captain Bonneville," and "Astoria," a chronicle of the fur trade, dealing with John Jacob Astor's peltry post on the Columbia river in Oregon. To these were added about this time a collection of short stories, entitled "Wolfert's Roost," a genially-written biography of "Oliver Goldsmith," and a work on "Mahomet and His Successors." The latter two were published after his return (in 1846) from the political mission to Madrid. At this period, he surrendered to the historian Prescott a project he had long contemplated, namely, to write a history of the Conquest of Mexico. The sacrifice of his cherished purpose was well atoned for, as it gave him the leisure to prepare his last and perhaps most elaborate production, the "Life of Washington."

For the writing of a memoir of the great figure of the Revolutionary era Irving lacked some essential qualifications. A patriot and lover of his country he in truth was, despite his long residence abroad, and the degree in which, as a man of letters, he drew his inspiration from the literary creations of the motherland. But he was no politician, nor had he that practical acquaintance with military matters which would have been helpful in writing critically of Washington as a soldier. He made good, however, the lack of these things by his high moral qualities, added to fastidious literary taste and genuine artistic intelligence, often conspicuously wanting in the mere portrait painter. Yet his sketch of Washington, if unambitious, is all the more true to reality, for it sets the nation's hero faithfully before us, in all the unaffected yet natural dignity of the man, with no exaggeration in the way either of praise or dispraise. The author's estimate of him, while calm and judicial, is never cold or unsympathetic; nor in the portrayal of his character do we fail to find well brought out Washington's conspicuous virtues — patriotism, patience, wisdom, unselfishness, and that constant elevation of mind and character that was most typical of the man and contributed to his commanding position and influence.

The "Life of Washington" * was Irving's latest work, for, within a month of the close of the year (1859) that saw it published, America's first great man of letters ended his earthly life. Like Walter Scott, with whom our author had many traits in common, the creator of Rip Van Winkle sleeps amid the scenes which his genius has enriched. Though fond of domestic life and of all tender human ties, he never married, preferring to remain faithful to the betrothed one, of whom death early robbed him and whose memory he constantly cherished. Gentle, true, and unselfish, his home life is a picture to be studied. To his friends he was endeared by many graces of affection and courtesy, while he was more than kind to those dependent upon him. As a man of letters, he must always, and especially in this country, be held in high honor, since there are few American writers who are better worthy the rank of a classic, or whose personal life is more full of mental and moral beauty. There are still fewer whose books, after the lapse of two generations, are more attractive to read, and, considering the deficiencies and desultoriness of the author's education, that are more instructive and profitable to study. The world, truly, is the better for his work.

G. MERCER ADAM.

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* Irving owes his Christian name to the fact that he was born at New York a few months before General Washington entered the city on its evacuation by the British.

THE STORY OF HUMAN PROGRESS:

A HALF-CENTURY OF SCIENCE AND INVENTION

IT would be trite to say, that in no other age within the annals of history has science made such giant strides in every department — including those of research, discovery and invention — as it has made within the past fifty years. In no other field of human endeavor has there been greater activity directed to more useful ends. The various applications of steam-power and electricity, and the many inventions and other adaptations of the period, have wrought a revolution as marvellous as it has been beneficent. We are accustomed to speak of the progress of education, the spread of knowledge, and the growth and influence of the press as signal manifestations of the glory of the age and the most remarkable instances of its tendencies. In the main, in so speaking, we are right, since these great agencies of enlightenment not only have had their effect in contributing to the mental and moral advancement of the nations, but have been instrumental in reforming abuses, in giving birth to countless philanthropies, and in elevating and enriching the life of the people. Nor has their least effect been produced in the domain of legislation. By reforms in legislatures and parliaments, democracy has fairly entered upon its rights, and the people, especially in English-speaking countries, are now, in the main, honestly, wisely, and happily governed. Yet the chief glory of the era lies in another direction — an era prolific beyond all others in profound investigators and skilled expositors of the results of scientific research.

The New Language of Science

But remarkable as has been the increase of knowledge and the mental activities in general within the era, even more remarkable, certainly, has been the manner in which the whole body of scientific doctrine has been revised and stated afresh in the light of new principles and generalizations, which have been forced upon it by recent discoveries. Science, observes a writer in the Edinburgh "Scotsman," to whom we are indebted for much of the following résumé, speaks to-day in a different language from what it did sixty years ago, and the learning of those days has been entirely recast. As remarkable as the progress of science itself has been the extent of the contribution which it has made to human welfare. Far as it has penetrated into the realms of abstract thought removed by a great gulf from the problems of daily life, it has constantly ministered to the needs of man.

The advance of Science and Invention

Science and invention have advanced hand in hand. Yet it has been a feature of their common advance that science has never lost sight of the ideal that knowledge is worth acquiring for its own sake. If there has been present the idea that any addition to our knowledge must bring with it some addition to human happiness, that idea has kept its place in the background, and utilitarian considerations have not hampered the free progress of scientific research, though they have at times directed its aim. With the growth of science has come a more proper sense of its value. It has become an integral part of the education of the people, a necessary part of the equipment of all who make pretension to be men of education. It is perhaps an exaggeration to represent this progress as the result of a struggle for freedom of thought; still there were prejudices to be overcome, and the labors of Tyndall and Huxley in popularizing science were to a certain extent of the nature of missionary labors. Fifty years ago the British Association was still engaged in what was an important part of its original purpose — namely, that of bringing science into better repute. Nowadays, so far as that is any part of its purpose, it might be regarded as an effete institution. Science has won for itself an assured position, and men, on both sides of the Atlantic, are more inclined to carp at its arrogance than to join in any general crusade to secure its recognition.

Utilization of the Scientific Method

With the general growth of knowledge, the barriers which separated its various departments have been broken down. The mathematician, the chem-

ist, the biologist, the physiologist, the geologist, and the astronomer, can no longer go their own ways without either hindrance or assistance from each other. The growth of knowledge has brought with it a higher conception of its unity, and of the mutual inter-dependence of its various branches. The free imagination of the geologist, who took his ease in the vast periods of time which he allowed himself for the creation of the world, has been curtailed by the calculations of the physicist, who will not allow to him the periods he demands for his task. The chemist, the physiologist, and the physicist have joined hands. They have borrowed each other's methods, and accumulated a vast stock of knowledge which under the old definitions none of them could claim as his own peculiar heritage. Biology has propounded a great generalization, which, after a struggle both within and without the ranks of men of science, has been applied with too great alacrity, perhaps, to problems of sociology, of philology, and of mythology, while in virtue of its application these branches of learning have claimed to be included among the number of the natural sciences.

Relation of Mathematics to the Sciences

Turning first to the most abstract of the sciences, that of mathematics, the progress that has been made during the period under review has been remarkable alike for the advances in regions of pure theory, and for the newer methods which have been placed at the disposal of the investigator. In the opinion of many, Sir William Hamilton's Theory of Quaternions, which has supplied the physicist with a new calculus, will be reckoned as one of the greatest discoveries of the century, while his other researches are equally noteworthy. But whatever their value, their character is such that only the expert can appreciate them. The same may be said of the researches of Cayley, of Bessel, and of Van Staudt. But perhaps the most remarkable advance is that which has been made in the borderland between mathematics and physics by the work of such men as Clerk Maxwell, Von Helmholtz, Sir George Stokes, Lord Kelvin, and Lord Rayleigh. Maxwell's work in particular has been far-reaching in its influence on the theories of electricity, magnetism, and light. While the borders of pure mathematics have been continuously extended, it has gradually asserted its dominion over the other sciences. Not only has it every year become more difficult for an experimenter in any subject to make his mark unless he is also a mathematician, but mathematical methods have been applied to the study of political economy and sociology, and even to the solution of problems in biology.

Astronomy assisted by Photography and the Spectroscope

In astronomy the most brilliant achievement has, perhaps, been the discovery of the planet Neptune, by Adams and Leverrier in 1845. The discovery was based upon data supplied by observation, but its most remarkable feature was that the existence of the planet was foreseen from calculations based on the perturbations of another planet before it was actually observed. The application of the spectroscope to the study of the heavenly bodies has led to a vast extension of our knowledge of their motions and constitution. By its means the fact has been proved that the chemical constitution of the sun or of the most distant fixed star is not essentially different from that of the earth; by its means it has been found possible to tell whether a star is advancing towards us or receding, and with what velocity. The physical condition of the sun has been clearly determined, and observations which were formerly only possible during the brief period of an eclipse have been made possible at any time. Photography has proved a useful ally in spectroscopic work, while in the mapping of the heavens, and in the discovery of stars too faint to make any impression on the human eye, it has proved of inestimable service. Since 1840 seven secondary bodies have been added to the planetary system. These include Neptune's solitary moon and the two dwarf moons of Mars.

Geology and its Battles

Geology has made steady progress. The battle between the Uniformitarians and the Catastrophists, which was raging early in the century has been definitely decided in favor of the former school. The theory of a great ice age, which was first mooted by Agassiz,

has been generally accepted, though it still has its opponents, who find in the action of water sufficient explanation of the appearances generally ascribed to the action of ice. The long battle between the advocates of a cosmogony founded on the Book of Genesis may be said to be at an end, and Science has triumphed all along the line. But while the uniformitarian school has triumphed, they have had to make concessions from their epochs of geological time. Calculations with regard to the age of the earth by Lord Kelvin and others, based on its rates of cooling, have established a superior limit of time, which is considerably short of that which the geologists demand. As yet there has been no agreement between them, and each school is inclined to insist on the validity of its own conclusions.

But though geology has during the period brought forward no broad and striking generalizations, such as have completely modified the course of other sciences, it has proceeded on its old ways with the utmost diligence. The acceptance of more rational views with regard to the origin of rocks led to the systematic study of the remains embedded in them, which became a matter of more serious interest, while the controversy with regard to the theory of Evolution had a distinct influence in promoting the growth of palæontology, as the study came to be called. The researches of Lyell, Owen, and Huxley not only evolved many strange creatures from the rocks, but established their relationships and the order of their development. Progress has also been made in mineralogical geology, though it has, perhaps, hardly been so remarkable, and the work of mapping out the earth's surface has been carried on with great energy. Of this work the labors of Geological Surveys have formed no small part. Geological progress has also modified our conception of what geography is, and how it should be taught.

Geographical Discovery

While our knowledge of almost every part of the earth's surface has been extended, it is in the Polar regions and in Africa that the advance has been greatest. Since Sir John Franklin started with the "Erebus" and "Terror" in 1845, repeated expeditions have attempted to solve the mystery of the Pole; and though all have hitherto failed to reach it, our knowledge of these regions has been continually extended. In 1850 Captain M'Clure discovered the North-West Passage, and the voyages of the "Alert" and the "Discovery" under Sir George Nares, those of Lieutenants Greely and Peary, and Nansen's recent expedition in the "Fram," cannot be passed over. Of Africa little was known sixty years ago save the coast line. The interior was a blank on all truthful maps. Now little remains to be filled in. In the fifties the missionary labors of Livingstone aroused interest in the Continent. His discovery of Lake Nyassa was followed up by Burton's discovery of Tanganyika, by Speke's of the Victoria Nyanza, and Baker's of the Albert Nyanza. These discoveries threw open the whole Lake region, and the discovery of the sources of the Nile soon followed. The Niger and the Congo basins (the latter under Henry M. Stanley) were similarly investigated, and except for the remoter parts of the Sahara and portions of Somaliland, little now remains unknown. The centre of Asia has also been the scene of much valuable work, and the interior of Australia has been opened up. In every portion of the world the cartographer has been busy.

Physics

It is, however, when we pass to the sciences of physics, chemistry, and biology that we meet with the most striking advances both in the direction of the accumulation of knowledge and in the discovery of great natural laws. It is here, too, that science has made its greatest contributions to human welfare, and that science and invention are most closely allied. As has been already indicated, the advance in the physical sciences has been mainly the result of the application to them of mathematical methods. The results of such treatment are in general remote, and when science dogmatises on the size or motions of an atom, the evidence and the logic are not such as admit of being tested by common sense. One effect, however, has been that the various departments of physical science have been brought more closely together. Light, sound, heat, and electricity, instead of being regarded as phenomena each forming a separate branch of study, have been treated as essentially akin.

This method of treatment has led to one of the most striking generalizations that the period has produced, namely, that of the conservation of energy. The great conception that the so-called forces of Nature are all different manifestations of energy was gradually developed. Sir George Grove foreshadowed it in his work on "The Correlation of Physical Forces," and Dr. J. P. Joule, by determining the mechanical equivalent of heat, gave it a numerical basis.

From Joule's experiments it was but a step to the broader conception that the amount of energy in this universe is a fixed and unalterable quantity, that the various phenomena of Nature are but the transference of energy from one form to another, and that this transference always takes place in a definite and quantitive relation. But the conception of the conservation of energy was almost immediately followed up by that of the dissipation of energy, the meaning of which is that at every transference some portion of the energy takes a form in which, so far as we know, it is no longer available for reproduction into other forms. The total quantity remains the same, but its distribution is different. The conclusion to which such a view tends is that ultimately a condition will be reached when the earth as we know it will cease to exist. The two conceptions, though complementary, thus lead to somewhat different conclusions. The one teaches us that energy is eternal, the other that our world has its predestined period of existence — that it is like a piece of mechanism which is gradually running down.

Electricity

It is perhaps in connection with electricity that the most notable advances have been made. Though sixty years ago man saw the mighty effects of electricity in Nature, and had learned to make some small use of it, it is only within the last few years that it has become one of his most useful servants. Clerk Maxwell said that the greatest discovery of the century was the reversal of the Gramme machine, and subsequent developments have accentuated the truth of the saying. The gradual development of the electromagnetic machine provided a means of generating electric currents on a large scale, and by a reversal of the process the electric current was made to do work. Indeed, the applications of electricity are so numerous that it would be impossible even to enumerate them. By the invention of the incandescent lamp electricity has been made to serve for the lighting of our houses, while the arc light is no longer merely a scientific curiosity. As a means of conveying power for traction and other purposes its uses are extending every day, and electro-metallurgy has given to industry a new and most useful process. The electric telegraph, which was little more than a toy fifty years ago, has been perfected in many ways, and has become an indispensable adjunct of modern life. The same may be said for the telephone — an invention for which the period can claim full credit. The analysis of sounds has led to the invention of another of the marvels of science — namely, the phonograph; while the study of the phenomena of heat has led to the discovery of economical means of producing cold, and the introduction of refrigerating chambers on board ship has opened up new and most important lines of commerce.

Chemistry and the Industrial Arts

Chemistry in 1897 is quite a different science from what it was in 1847. Though Wöhler's synthesis of urea, which was the foundation of organic chemistry, was made before 1847, the science which has been founded on it has been mainly built up since then. Organic compounds innumerable, both natural and artificial, have been made and studied, and in point of volume alone the work that has been done in this department of science compares most favorably with that done in any other, while no science has made more valuable contributions to industry. Medicine, too, has been a gainer by its triumphs, and recent discoveries have yielded to it some of its most useful drugs. The investigation of the paraffin series of compounds by Kekulé, and the establishment of the general laws of their constitution, brought order into the chaos of organic chemistry, while by giving to the science the idea of valency it also reacted upon inorganic chemistry. The investigation of other series soon followed, the benzine group in particular being made to yield to industry a number of most valuable products. But perhaps the most important

discovery from an industrial point of view was that of mauve by Perkin. This led to the discovery of the whole group of the so-called aniline dyes, the use of which has completely revolutionized the art of dyeing, though, it has to be said, the manufacture of these products is now mainly carried on in Germany, instead of in this country. Mention should also be made of the synthesis of alizarin, which led to the substitution of an artificial Turkey red for the natural article. The various synthesis of indigo have also been of considerable commercial importance.

The New Elements—Argon, Helium, etc.

The artificial production of natural products is still proceeding, and the science has ceased to recognize the possibility of any limits to its success in this direction. Considerable advance has also been made in inorganic chemistry. The number of the elements has been extended, and the knowledge of their properties has been enlarged. The use of the spectroscope led to the discovery of various rarer elements, such as rubidium, cæsium, and thallium, and also furnished a new and delicate method of analysis. The statement of the periodic law by Mendeljeff led to a new conception of the relations of the elements, while the blanks in his scheme gave a clue to the existence of elements which were not yet undiscovered, and a means of foretelling their properties. One of these gaps was filled in by the discovery of gallium, and the properties of the new element corresponded with those which were given by the periodic law. Perhaps the most remarkable achievement in this direction has been the recent discovery by Ramsay of a new constituent in the air, to which the name of argon has been given. The existence of this element was, however, not foretold by Mendeljeff's theory. Nor is it easy to find a place for it in that scheme, and chemistry seems to be face to face with an element which has little in common with the rest of the stuff of which the earth is made, but is, as it were, a legacy from another world. The discovery of another rare element, to which the name of helium has been given, gives rise to similar difficulties.

Metallurgy

In the science and art of metallurgy the advance has been most remarkable. The use of the Bessemer converter and the Siemens regenerative furnace has made steel almost as cheap as iron, and in the construction of ships and bridges the latter has been almost entirely superseded. Another similar achievement has been the manufacture of aluminium on a commercial scale by the use of electricity. This is, however, but a thing of the last two or three years, and the metal is only gradually coming into general use. Mention should also be made of the remarkable advance in the direction of the utilization of waste products. In several instances, the saving thus effected has, owing to the severity of competion, become the sole source of profit.

The invention of photography may be claimed as one of the greatest scientific triumphs of the period. In 1839 the processes of Daguerre and Fox Talbot were published. Both had solved the problem of taking pictures by means of the sun's rays, but it was the calotype process — the invention of the Englishman — that was the germ of later development. Since then progress has been rapid and continuous, and photography has proved a valuable ally of both the arts and sciences.

Biology

It is to biology that we must turn for the most remarkable generalization that the period under review has produced. The general acceptance of the principle of evolution may be said to have revolutionized our whole conception of natural history, using the phrase in its original and wider sense. The idea itself was by no means new. It is to be found in the Greek philosophers, while its revival in modern times is mainly due to Lamarck. But the publication of Darwin's "Origin of Species," in 1859, gave to the idea a fresh vitality. He gave a new mechanism to the process, which he summed up in the somewhat unfortunate phrase of Natural Selection. Starting from the fact that Nature is prodigal in producing life, and that individuals vary from each other, he laid down the principle that one form of life is Evolved from another by the survival of that form which is best fitted to the conditions of its life. The idea was first applied to the explanation of species, it was then extended to that of man himself, and the mechanism of the process was further strength-

ened by the introduction of the idea of sexual selection. The "Origin of Species" aroused a storm of angry controversy, in which Huxley took a prominent part. The battle ranged at first round the idea of the fixity of species, and the doctrine of Evolution was denounced as being contrary to the teachings of revealed religion. Gradually, however, the tumult subsided, and the main idea of evolution may now be said to be generally accepted.

Influence of the Doctrine of Evolution

While evolution has been accepted in biology, it has also become so deeply engrained in common thought that it has been used to explain almost every historical process, often with more zeal than discretion. Sociology, ethics, and even jurisprudence have all been modified by the application of the idea. And while theologians and moralists are still engaged in the task of adapting their creeds to the new ideas, as far as science is concerned, interest now centres mainly in the discussion of the mechanism of the process, and such problems as those of variation and the inheritance of acquired characteristics have become the subject of controversy. Zoölogy has, of course, been profoundly modified by the acceptance of the principle of evolution.

Considerable attention has been directed to the question of the geographical distribution of animals, and in this connection mention should be made of the expeditions of the "Beagle," the "Porcupine," and the "Challenger." The results obtained by the latter expedition have revolutionized previous ideas as to the nature of the ocean, while a vast store of information with regard to pelagic creatures of all kinds was acquired. Similar progress has been made in botany, which, instead of being a mere catalogue of plants, has become closely allied with physiology and chemistry. The researches of Von Baer, which were given to the public more than half a century ago, were the foundation of the science of embryology,* which has in the hands of many workers continued to make steady progress. Physiology may also be said to be a new science, which has gathered together a vast amount of information as to the mechanism and conditions of life and the processes of assimilation and perception. The recent advance in the direction of a physiological psychology is also typical of the manner in which science has extended its borders and attacked problems that were formerly considered to be without its sphere.

Strides in the Medical Sciences

It is to the interest in the question of the origin of life, which the theory of Evolution brought with it, that we must ascribe another brilliant series of researches, that have been of inestimable service to humanity. The discoveries of Pasteur and others with regard to the effective part played in the processes of fermentation by minute organisms have been of far-reaching importance. Not only have they given us in bacteriology a new department of science, but they have completely revolutionized the art of surgery. Lister's invention of antiseptic surgery has opened a new sphere of activity to the surgeon, and he now recognizes no limits to his powers, save those imposed by physiology. But for the invention of anæsthetics, which preceded it, this advance would have been impossible. The use of chloroform was first introduced by Sir James Simpson in 1847, in Scotland, while ether was similarly introduced about the same time in America. The use of chloroform was at first vigorously opposed, but it speedily triumphed over all opposition. Operations which sixty years ago were regarded as bringing almost certain death, owing to the disastrous secondary consequences, are now attended with but little danger.

The advances in medicine have been less striking than those in surgery, though of recent years it, too, has made great strides. Like surgery, it has been the gainer by what it has borrowed from pure science, and the use of antitoxins of various kinds, though still in the experimental stage, promises to be prolific of remarkable results. Mention should also be made of the use of various natural secretions, such as the thyroid extract, as therapeutic agents. Nor is there any reason to believe that the wonders of science are exhausted. It is little more than a year since the world was startled by the discovery of the Roentgen rays, and the marvellous photographs of the

*See article on Embryology, in Encyclopædia Britannica, Vol. VIII, page 165.

inner structures of the body, which were taken by means of them.

Machinery

In addition to those inventions which have been the direct outcome of scientific research, there have been many others for which such an origin cannot be claimed. In the use of steam a great economy has been effected by the employment of higher pressures, rendered possible by the use of steel instead of iron in the construction of boilers, and by the use of compound engines with several cylinders at different pressures. The improvement in marine engines has perhaps been the most remarkable, and there has been a great gain in efficiency in proportion to weight. Almost every industrial process has been perfected and improved, and in all directions hand labor has been superseded by machinery. But the progress has been so extensive that it is only possible to indicate a few of its more salient features. In the textile arts there has been no invention which can compare with the invention of the spinning jenny, but all the appliances have been gradually perfected and made more automatic, the most remarkable development having been that of the power-loom, which sixty years ago was yet in its infancy.

In printing machinery there has been a great advance, which has been most marked in the case of the machinery used for the production of newspapers, the use of stereotyping and the rotary press having rendered possible the large issues of to-day. Type-setting machines are now coming largely into use, while new improvements are constantly being invented; the linotype, indeed, seems certain to revolutionize the compositor's craft. As an adjunct to the type-setting machine, an ingenious mechanic at Hartford, Conn. (Mr. Des Jardins), has just patented a type-justifying machine, which automatically lifts lines of type from a galley and adjusts the spacing, doing its work without assistance of any kind. The result is astonishing, since the machine secures absolute, mathematical accuracy, such as is demanded in the best book work.

In the bicycle we have an invention which may be said to belong entirely to modern times. In 1840 a Scotchman adapted cranks to the ungainly hobby-horse of the beginning of the century, and thus invented that means of propulsion, which of recent years, owing to the invention of the pneumatic tire, has become, both in Britain and in the United States, remarkably popular. In the latter country the perfection to which the bicycle has attained, in all its parts, is a marvel, and the marvel is all the greater when one reflects that two hundred miles in one day, with comfort and even pleasure, is now practicable upon one of the latest of these touring pneumatic machines. Not less striking is the advance recently made in the manufacture of the motor or horseless carriage, which bids fair, when the cost of construction has been reduced, to displace all other vehicles of travel. Already the once formidable difficulties in their manufacture have been overcome, in the matter of speed, capacity to take sharp grades, facility in stopping and starting, as well as in reduced cost of charging the battery.

Results of Research the Common Property of Nations

The results of scientific research and inventive ingenuity are the common property of all nations. Workers in all lands have assisted one another, and have accepted each other's results, so that it is difficult to claim for this or any other country its peculiar share of credit. England's share has been no small one, and a country which has given to the world of science the Darwinian theory, the doctrine of the conservation of energy, and has led in the use of anæsthetics and antiseptics, has no reason to be dissatisfied with its achievements. It may be that certain branches of research are carried on with greater energy in this and other countries, but to the general progress of science the era has made, and is still making, a worthy contribution.

What the years to come may bring it is impossible to foretell. There is no sign of abatement in the present rate of progress. Every advance in knowledge has brought with it the promise and the potency of further advance, and has suggested problems which have been eagerly attacked. But even if knowledge continues to grow at an ever-increasing rate, as it has done of late, nothing in years to come can mar the brilliance of the record. Though the present era pale in comparison with the years to follow, it cannot fail to be a period of outstanding importance by reason of its contrast to the years that preceded it.

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V AUGUST, 1897 NO. 5

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MONTGOMERY B. GIBBS, BUSINESS MANAGER

BRITAIN'S INCOMPARABLE SEA-POWER

The significance has naturally not gone unnoticed of that imperial pageant — the British naval review at Spithead — which closed the recent jubilee festivities in England. No spectacle could well be more impressive than the thirty miles of magnificent ironclads, embracing a fleet of one hundred and sixty-five vessels of war, which were assembled in the waters of the Solent on the 26th of June last, as a demonstration of Britain's unparalleled naval strength and of her unexampled supremacy at sea. In that monster gathering of warships, which, it has to be said, represented only the home-protecting fleet, and was exclusive of Britain's cruisers in the Mediterranean and on foreign stations, the world sees the symbol of Britain's real strength and the might of her imperial power. Nor was the demonstration in the Solent formidable only in the number and armed array of vessels; it was formidable most of all in the fact that the fleet was wholly modern, and in offensive and defensive force — in speed, weight and strength of armament — rivals the combined navy of two, if not three, of the other chief European powers. The spectacle of these myriad monster castles afloat showed unmistakably in whose hands the sceptre of Neptune resides; while the pageant not only revealed grim masses of iron and steel work and colossal examples of mechanical skill and construction, but a remarkable return to the beauty of line and even poetry of motion that used signally to mark the "wooden walls of Old England."

The scene off Spithead was so unique as to extort from every intelligent spectator the frankest and heartiest admiration. This is the testimony, we may say, not of the English press, naturally elated over the demonstration, but of the commanders and flag-officers of the fourteen warships of foreign countries sent to do honor to the English nation and its sovereign on the occasion of the Diamond Jubilee. It is especially the testimony of the officers of the "Brooklyn," our country's magnificent cruiser, present on the occasion, which attracted so much official and professional attention, as well as the judgment of our own ambassador and the express representative of the President at the jubilee ceremonies. This country, of all nations that may be deemed foreign to England, has no reason to withhold honest pride in the triumphs of an English-speaking power or to belittle its splendid naval equipment for defense and not for aggression. Nor can facts wisely be ignored by international churlishness or jealousy, which it is important for this country, itself ambitious of sea-power, to realize and take note of for its own national advantage.

The United States, however, in this matter, does neither ignore nor belittle. Between this country and the old motherland there must be always something more than courteous interest or even friendly rivalry. In spite of the schism of the last century, we are inheritors with her of the past glories and traditions of the grand old island realm, and have a present interest in, as we have in no little contributed to, the expanding influence and intellectual and moral power of the English-speaking race. Together we are united by ties not alone of sentiment, but of real and palpable relationship, and especially by the bonds of religion, race-origin, and of a common language and literature. It is to the sense of international duty in these two great powers of Anglo-Saxon origin, as well as to their mutual amity and good will, that modern civilization looks to uphold the peace and advance the moral progress of the world. The day of fraternal strife can no more return to these two great peoples without consequences appalling to contemplate to the entire modern world. Hence, hosannas in the one nation may well evoke hosannas in the other, and a race-citizenship unite them in glorying in the high traditions of the past and in

guarding and advancing those beneficent humanitarian interests which belong to each in common.

A SWEDISH INVENTOR'S BEQUEST TO SCIENCE

In our February number (1897) we gave an account of the career of Alfred Nobel, the Scoto-Swedish inventor and manufacturer of blasting explosives, who died in December last, leaving his immense fortune, of over nine million dollars, to an international fund for the furtherance of scientific experimentation and research. Since then further details have come to light of the savant's princely bequest in the interest of his favorite studies, and especially for enlarging the scope of investigation in the science of physics. The will, it seems, provides that the income from Mr. Nobel's fortune shall be divided into five equal parts, one-fifth being appropriated annually to reward the person who shall make the most important discovery or invention in the science of physics, and one-fifth each to those who shall make the most eminent discovery or improvement in chemistry, in physiology or medicine, or produce the most distinguished idealistic work in literature. The remaining fifth, the will stipulates, shall go to the person "who has worked the most or best for advancing the fraternization of all nations and for abolishing or diminishing the standing armies, as well as for the forming or propagation of committees of peace." The competition is to be world-wide, and no discrimination is to be made on the ground of race or nationality. To whose arbitrament the work of competitors for the prizes is to be assigned has not yet been made public; but that the awards, which will amount to $50,000 or $60,000 each, annually, will stimulate research and materially aid social advancement can hardly be gainsaid, while the bequest, otherwise, is a beneficent and enduring one.

THE LATE PROFESSORS DE VOLSON WOOD AND J. M. LANE

Since the article on "Technical Schools in America" was put in type in the present issue of SELF CULTURE, its distinguished author, Professor De Volson Wood, has had, we regret to say, to answer death's imperious summons. Professor Wood was born at Smyrna, N. Y., June 1, 1832, and died June 27th last, in his sixty-fifth year. After taking a course at the State Normal School at Albany, in which for a time he was an instructor in mathematics, he entered the Rensselaer Polytechnic Institute at Troy, where he graduated in 1856. From 1857 to 1872 he occupied the chair of civil engineering in the University of Michigan, and in the latter year was called to the professorship of mathematics and mechanics in the Stevens Institute of Technology, Hoboken, N. J. In 1885 he was transferred to the chair of mechanical engineering. He was a constant experimenter and an instructive writer. Among his inventions are an air-compressor, a pneumatic rock-drill and steam pump. His writings embrace a work on the "Resistance of Materials" (1871), and treatises on "Elementary Mechanics" (1878), on "Trigonometry" (1885), and on "Thermo-dynamics" (1887). He was the first president of the Society for the Promotion of Engineering, and was a member of the American societies of Civil Engineers and of Mechanical Engineers.

American scholarship suffers a serious loss in the death, at Cambridge, Mass., on the 30th of June last, of Professor George Martin Lane, who for over forty years held the chair of Latin language and literature in Harvard University. Professor Lane was appointed professor of Latin in 1851, and elected Pope professor in 1869, filling the post until the year 1894, when he accepted an emeritus professorship from the college corporation, with the degree of LL.D. He was an enthusiastic Latinist, and in and out of Harvard did much for the study of the classics during his long and active career. In Professor Lane's death Harvard loses one of the last of the bright band of scholars who were the contemporaries of Holmes, Longfellow, Lowell, Child, Norton, and Agassiz.

Another Cambridge man disappears in Alvan Graham Clark, the eminent telescope maker and astronomer, who died at Cambridge, Mass., on June 9th last. This last of the family of the famous American lens-makers had only just returned from placing the colossal objective his firm had manufactured in position in

the great telescope-tube at the Yerkes Observatory in Wisconsin. Astronomy, says "Science," is deeply indebted to the senior Alvan Clark, who died in 1887, and to his two sons. In 1859 Mr. Clark began the making of an object-glass 18½ inches in aperture, the largest that had up to that time been attempted. In 1873, the firm made the 26-inch objective for the observatory at Washington, and in 1880 the 30-inch refractor for the Imperial Observatory at St. Petersburg. These were followed by the 36-inch lens of the Lick Observatory and the recently completed 40-inch lens for the Yerkes Observatory. The making of such lenses was a scientific work of the utmost value, as it calls for the greatest accuracy. Mr. Clark had also made direct contributions to astronomy, including the discovery of the companion of Sirius in 1862, for which he was awarded the Lalande medal of the Paris Academy.

STENOGRAPHY IN THE SCHOOLS The increasing use of short-hand in connection with the type-writer, in our age of hurry, suggests a more general and early resort to it in the training of youth. In many schools, we are aware, short-hand is taught, but in others, and by far the majority, there is no provision for teaching it, though much time is given to the writing lesson, which is frequently absorbed by elaborate practice in ornamental penmanship. The latter in many instances involves an unnecessary waste of time and patience which would be more serviceably expended in acquiring some practical knowledge of phonography. For literary purposes, and indeed for most of the ordinary purposes of writing, the use of short-hand is of great moment — the economy in its use over the present system of writing out in full being a matter instantly verifiable by any one familiar with the system. To the student in making rapid notes of lectures, and in transcribing passages from text-books for future reference and use, acquaintance with phonography would be of great assistance, while in his after career he would find it highly serviceable and profitable to him in whatever occupation or profession he is to engage.

Some years ago phonography was made the subject of reference in a Presidential address before the British Science Association, in some such words as the following:

> It seems strange that while we actually possess a system of short-hand by which words can be recorded as rapidly as they can be spoken, we should persist in writing a slow and laborious long-hand. It is intelligible that grown-up persons who have acquired the present conventional art of writing should be reluctant to incur the labor of mastering a better system; but there can be no reason why the rising generation should not be instructed in a method of writing more in accordance with the activity of mind which now prevails.

The utility of short-hand, in this commercial age, is every day becoming more and more an admitted fact, and if the system could be more generally introduced into the schools, as a part say of the writing lesson, we are certain of its immense advantages to those who can acquire facility in writing it. To become a short-hand writer is not, of course, an attainment within the easy reach of all. Like other acquirements, the royal road to it is through application and perseverance. Two things, it has been said, are especially necessary to the complete mastery of short-hand; namely, first, to begin, and next, to go on with its acquirement and practice. The learner must, as it were, grow into the use of short-hand writing, pretty much in the same way that he advances to perfection in any other everyday attainment. The study, we may add, has been further facilitated the other day by the invention of a short-hand type-writer. In these ingenious machines the characters are printed transversely across a continuous strip of paper, a word being printed at one stroke in plain English letters.

NEW GOLD DISCOVERIES ON THE YUKON Nature's caprices in the geographical distribution of the mineral wealth of the world would make a curious study. One day she lures the miner to the ends of the earth in one direction, the next, as if in sport, she lures him to the antipodes of the region. The latest fields of auriferous attraction are the upper reaches of the Yukon river in Alaska, or rather inland from Alaska, beyond the boundary line that separates the latter from the Canadian North-West Territories. Here, in the Clondyke district (which we take to be about 250 miles N.N.E. from Mt. St. Elias, or by water

navigation, probably 1500 miles from St. Michael's, on Norton Sound), a tract of gold-producing ore of almost fabulous richness has been discovered. A mining party, some forty in number, has just returned from the region, bringing with them, it is said, gold-dust to the value of $500,000. The steamer, which brought the miners to San Francisco, brought a large additional shipment of gold-dust.

As the result of this new find, we may expect the usual frenzied rush into the country, with the accompanying disappointments and distress, though that has been the way the waste-places in the world have been settled and congested regions relieved of their superabundant population. Fortunately, the Yukon, we believe, swarms with salmon, and of proportions that would put the home-angler to the blush were he to name their length and weight. As these fish ascend the river for over a thousand miles, there would be little fear of starvation, during the short summer months at least when the Yukon is not ice-bound, in the case of a vast influx of mining population. In the winter, game, we understand, is still plentiful, for the fur-trade continues to be a profitable industry, and, in the upper reaches of the Yukon, the climate, contrary to general belief, is said to be milder than on the coast. The process of mining the gold, moreover, is not a serious labor, since the yield has, so far, been from placer deposits and from the beds of streams rich in metalliferous silt washed down from the mountains. As the district of the new gold camps lies, as we have said, in Canadian rather than in Alaskan territory, we shall be fortunate if we do not embroil ourselves with the government of the Dominion in permitting our miners to flock into the region. The international boundary is still in dispute and this fact adds to the differences between the two countries, already sufficiently vexed by the seal question in Bering Sea and off the Alaskan peninsula.

INDUSTRIAL WAR

The community is once more agitated by strikes which threaten to extend indefinitely, to the intended discomfiture, if not the serious menace, of capital, forgetful that capital is the ally and not the enemy of labor. With the cause of labor we, who are of the toilers ourselves, are in hearty sympathy, but it is to real and not sham labor that we feel kindly, and we have no emotions to waste on the mere agitator. Nor have we any quarrel with trade-unions, guilds or other associations of industry organized for legitimate purposes, which do not threaten or unnecessarily incommode the community, are not in spirit anti-social, but whose members obey the dictates of reason and refrain from acts of violence and intimidation.

We admit, of course, that brotherhoods of labor expect from capital and its employing chiefs the same considerateness and restraint that we should seek to impose upon the Unions and their associate members. Tyranny is hateful, on whatever side it is exercised, and against wrong, whether on the part of capital or of labor, we do well, in the last resort, to fight. But fighting is too apt to be the attitude assumed in most labor conferences, and the wheels of commerce are constantly being clogged by industrial antagonisms. We want more conciliation and the bringing of grievances, unaffected by class enmities, into the court of the arbitrator. With frank and unheated conference, the resort to strikes would often be obviated and social chasms would be bridged that otherwise alienate and perpetuate class distinctions. That there is at times failure, on both sides, to meet and give effect to the counsels of reason is only to say that this is an imperfect world, and that transactions between man and man are, in this mundane state, not yet wholly governed by the maxims of the golden rule.

In the present coal-miner's strike, we say it frankly, reason as well as justice may well approve the action. Mining, we all know, is a hazardous and laborious occupation, and competition has of late cut prices so fine as to leave no adequate wages to the miner. The demand for higher pay is therefore both reasonable and just, and public sympathy will naturally go out to the strikers till they obtain, peaceably we trust, what is fair of their claims. At this season, the industry cannot afford to be embarrassed by a long strike, and we trust that the mine operators, who, we know, have not of late done a profitable business, may see their way to adjust prices so that justice may be done to labor, with due consideration for all other interests concerned.

EVENTS OF THE MONTH

Tuesday, June 15.—General Miles has arrived in London; in addition to visiting the Turkish and Greek armies, he inspected the ordnance made at the Armstrong factory at Naples for the Italian, Spanish, and Argentine governments; he also inspected the gun factories and coast defenses of Austria, Italy, and France.... At a meeting in Dublin, John Redmond announced that the Irish party would move in the House of Commons an amendment to the address of congratulation to the Queen declaring that Ireland is suffering from misgovernment, depopulation, and famine; that the only remedy for this condition of things is the concession of Ireland's demands for national self-government ....Mr. Wilfred Laurier, Premier of Canada, in a speech at a banquet in Glasgow, referred to Canada as "the great republic on the banks of the St. Lawrence."

Wednesday, June 16.—President McKinley sent to the Senate, with an accompaning message, a treaty for the annexation of Hawaii to the United States... President McKinley nominated Stewart L. Woodford, of New York, to be minister to Spain....The degree of LL.D. was conferred upon ex-President Cleveland by Princeton University....Count Ito, of Japan, in an interview at Paris, says Japan never had an idea of entering into a conflict with the United States about Hawaii....The Norway Storthing unanimously approved an address to the King in favor of concluding treaties to establish a permanent court of arbitration.

Thursday, June 17.—The President has refused permission to the Compaguie Francais Cables Telegraphique to land the new cable of the company at Cape Cod, or anywhere upon the United States coast....Tea importers have made large purchases in China and Japan for immediate delivery, and are having it hurried across the Pacific in order to enter it before the Dingley bill goes into effect; it is said that 1,000 tons have already been landed, and 12,000,000 pounds are on the way....Ex-Queen Liliuokalani filed at the State Department a protest against the ratification of the Hawaiian treaty of annexation....The death is announced at Woerishofen, Bavaria, of the Rev. Father Sebastian Kneipp, known throughout the world for his water cure system, which proved to be remarkably efficacious in the treatment of chronic cases by the application of water in various forms.

Friday, June 18.—Storms caused great damage to property in Kentucky and several of the Western States; in some of the States a number of lives were lost....The Smithsonian Institution has received by bequest a collection of Chinese and other Asiatic coins, consisting of 2,025 pieces, and representing the coinage of China from 700 B.C. to the present time....An inquest was held on the body of Barney Barnato, at Southampton; the coroner's jury found a verdict of death from drowning while temporarily insane....The Prince of Wales presided over a banquet given by the Imperial Institute to the Colonial Premiers....The Province of Assam, in British India, has been devastated by the earthquake; the monsoon has fully burst, and it is raining heavily and continuously in India.... The State Council of Switzerland has declared in favor of the State acquiring the railroads.

Saturday, June 19.—President McKinley, it is stated, has determined to revive the abandoned treaty of general arbitration between the United States and Great Britain, a new treaty having been drafted to serve as the basis of negotiations....Dr. Miguel, who is to replace Dr. von Boetticher, the German minister, will have increased prerogatives and functions....M. Hanotaux announced that the dispute between France and Venezuela had been settled....More than six thousand lives are reported to have been lost in the recent earthquakes in India.... It is said that the draft of the treaty of peace between Greece and Turkey will be submitted to the Powers in a few days.

Sunday, June 20.—Two shocks of earthquake occurred throughout California; but little damage was done....The Maine Populist State committee, at Lewiston, have declared against any further alliances with the silver faction of the Democratic party....Services were held in many churches to commemorate the sixtieth accession of Queen Victoria to the British throne ....The celebration of Queen Victoria's diamond jubilee was begun; thanksgiving services were held in St. Paul's, Westminster Abbey, and in churches throughout the United Kingdom, and in nearly every large city in Europe; the Queen and members of the royal family attended the services at St. George's Chapel, Windsor.

Monday, June 21.—President McKinley sent a personal letter of congratulation to Queen Victoria....At a meeting of ex-ministers of the Liberal party in Madrid Señor Sagasta denounced the home and the foreign policy of the Premier; the Liberals will persist in abstaining from all relations with the Government as long as the Duke of Tetuan is retained in the Cabinet.... The Sultan has submitted to the Peace conference a counter project for the delimitation of the frontier....Queen Victoria went from Windsor to London; in the afternoon she received the royal envoys at Buckingham palace; after entertaining ninety of her most distinguished guests at dinner, her Majesty received the diplomatic corps.

Tuesday, June 22.—The Cabinet discussed the Hawaiian annexation treaty; the administration will not press the treaty in Congress until the regular session in December....The secretary of the treasury received information of the capture of the suspected filibuster *Dauntless*, off Indian Key, Florida, with men, arms, and ammunition on board....The Queen's jubilee procession in London was a magnificent success....An official denial has been made at Madrid of the statement that the United States government has sent a fresh note to the government of Spain on the subject of Cuba.

Wednesday, June 23.—The Japanese government has entered a strong protest against the annexation of Hawaii by the United States, on the ground that annexation would be injurious to its interests....The number of immigrants that arrived in this country during the eleven months ended May 3, 1897, was 210,271....The

Ohio Republican State convention at Toledo completed its work by nominating a State ticket headed by Asa W. Bushnell for governor.... Queen Victoria received congratulatory addresses from both houses of parliament, and was also greeted by 10,000 school children who were assembled on Constitution Hill.

Thursday, June 24.—Senator Lodge has introduced a bill providing for the retirement of government employees and appropriating a fund for that purpose by withholding 2 per cent. of their salaries....The reunion of the Confederate veterans at Nashville closed with a great parade, in which more than ten thousand veterans took part....The four hundredth anniversary of the discovery of Newfoundland by John Cabot was observed by appropriate exercises at St. John's; the cornerstone of a tower to be erected in honor of Cabot was laid at Bristol, England....Mr. George N. Curzon, replying to a question in the house of commons, declined to express an opinion regarding the proposed annexation of Hawaii....A treaty for the provisional union of the Central American republics has been signed.

Friday, June 25.—Governor Bloxham, of Florida, appealed to President McKinley for United States troops to restore order at Key West, where there is great excitement over an attempted lynching....John Moses, colored, was lynched at Crystal Springs, Miss., for murder.....School children had a celebration at Windsor which was witnessed by the queen; in the evening Eton boys gave an exhibition of torchlight evolutions and fireworks.

Saturday, June 26.—Senator Pettigrew, of South Dakota, was stricken with paralysis of the vocal chords while making a violent tariff speech in the senate....A Washington dispatch says that the reply of the secretary of state to the protest of the Japanese government against the annexation of Hawaii has been forwarded to the Japanese legation and by them cabled to Tokio.....The British naval review was the greatest demonstration of sea power ever made; the United States cruiser *Brooklyn* was much admired by naval experts.....It is announced that the Argentine government will assume the debt of the province of Buenos Ayres, taking as a guaranty for its repayment the customs receipts at the port of Laplatte.....Mrs. Margaret Oliphant, the novelist, died (25th inst.) near London, England.

Sunday, June 27.—Many Turks and Christians have been killed in Crete in a series of fights originating in a dispute about pasturing.....A dispatch received in London from Santiago de Chili says a new Chilian cabinet has been formed.....The Spanish government has signed a contract for a 6 per cent. loan of $8,000,000, to meet the expenses of the war in the Phillippine Islands.....Heavy rains are falling in the interior of Cuba.

Monday, June 28.—Speaker Reed has the appointment of the house committees under consideration; he says that unless something now unforeseen occurs he will prepare the list and submit it before final adjournment.....Germany has refused to support the sultan in his efforts to retain Thessaly.....Moslems in Teheran, Persia, have attacked the Jewish quarters of the city, and threaten to exterminate the Jews unless they embrace Mohammedanism.

Tuesday, June 29.—Secretary Gage has designated Assistant-Secretary Vanderlip as the third member of the committee of three to investigate the practical workings of the coast and geodetic survey....The early passing of the tariff bill has resulted in a great rush of imports through the New York custom house during the past two days; receipts were $1,554,732.23, making a total for the two days of the week of $2,448,582.86....Bannock Indians in Idaho are ghost-dancing, and the governor of the State has asked for United States troops....The steamer Aden, from Yokohama for London, has been totally wrecked off the coast of east Africa, and seventy-eight persons were drowned or are missing.

Wednesday, June 30.—The Senate has confirmed the nomination of John Russell Young to be librarian of Congress....George M. Lane, Ph. D., Pope professor emeritus of Latin at Harvard, died in Cambridge, aged 73....The San Francisco chamber of commerce favors the immediate annexation of Hawaii by the United States....The Pan-Anglican church conference began with a private devotional service in the chapel of Lambeth palace, London, the official residence of the archbishop of Canterbury.

Thursday, July 1.—The 2,000 Streator (Ill.) coal miners decided to strike at once; the men in the Wilmington field agreed to go out when the national officers give the order....The treasury department issued warrants for $1,085,156 in payment of the bounty on sugar produced in 1894....Queen Victoria reviewed the troops at Aldershot; she was greeted with the greatest enthusiasm; the Prince of Wales led his regiment in the review....The lord mayor of London gave a banquet to the colonial premiers.... The government at Honolulu is not intimidated by the presence of a Japanese warship in Hawaiian waters.

Friday, July 2.—An arrangement has been completed between the United States and Mexico for an exchange of weather bureau reports....Between 75,000 and 85,000 men are idle as a result of the shutting down of iron, steel, and tin mills, because of failure to agree on a wage scale....The president has selected W. W. Rockhill, former assistant secretary of state, for the post of United States minister to Greece....The cornerstone of the proposed monument in honor of Brigham Young and the Utah pioneers, to be erected at Salt Lake, was laid....Rioting ceased in Calcutta owing to a compromise on plague measures; the situation in India remains grave, and a rebellion of large proportions is feared.

Saturday, July 3.—President McKinley arrived in Canton....High temperature caused much suffering throughout the west....Rainfall that almost amounted to a cloudburst caused about $200,000 damage in Duluth, Minnesota....A convention of coal mining delegates at Pittsburg voted to indorse the strike order of the general officers of the united mine workers....The Prince of Wales presented medals to the colonial troops who took part in Queen Victoria's jubilee....The delay in the peace negotiations between Greece and Turkey is causing great uneasiness....The daughter of Rear Admiral Miller, U. S. N., died in London.

Sunday, July 4.—An advance in wages was conceded to the tinplate workers as a result of the wages conference at Pittsburg....Troops opened fire on a mob of rioters at Simla, India, dispersing them and wounding and capturing their leader....The powers have sent a collective note to the porte protesting against the quibbling and dilatory tactics of Tewfik Pacha in the peace negotiations....The British flag has been hoisted on Russell, Bellona, and Stuart Islands, belonging to the Solomon group ....Sir John Bennett, the famous watchmaker, is dead.

Monday, July 5.—Thomas F. Bayard made an address at a Fourth of July celebration in Philadelphia....Ex-Senator Hill made an address in Oswego, in which he discussed present social and industrial problems....A brilliant company gathered and notable speeches were made at the Independence day dinner of the American society in London... Emperor William has sent an autograph letter of thanks to Dr. von Boetticher, the retiring vice-president of the Prussian ministry and imperial secretary of state for the interior....Count Okuma, prime minister of Japan, is quoted as saying that Japan will impose export duties on tea, carpets, and other articles in retaliation for the Dingley tariff.

Tuesday, July 6.—The President and party returned to Washington from Canton....The strike order of the national executive board of the united mine-workers of America was obeyed by from 10,000 to 15,000 of the 21,000 miners in the Pittsburg district....Hon. Wm. J. Bryan, in a speech at Los Angeles, Cal., severely arraigned the McKinley administration....Baron Ernest von Thielmann, German ambassador to the United States, has been recalled to Germany to become minister of the treasury.... Lord Salisbury, in the House of Lords, said Turkey had carried deliberation in the negotiation of the terms of settlement with Greece to such an excess that the delay was not without danger; the delay, he added, is entirely the fault of Turkey.

Wednesday, July 7.—The Senate committee on foreign relations reported a resolution authorizing the president to demand indemnity from the Spanish government for the injuries suffered by two naturalized Americans....The opening meetings of the international Christian Endeavor convention were held in San Francisco....The international gold mining convention met at Denver, Col .. It is reported in England that Mr. Joseph Chamberlain, secretary of state for the colonies, will propose the representation of the colonies in the House of Lords ....Lord Salisbury received the United States monetary commissioners....Russia has sent a circular note to the Powers suggesting that steps be taken to expedite the conclusion of peace between Greece and Turkey.

Thursday, July 8.—By direction of the President, a medal of honor has been awarded to Gen. John M. Wilson for distinguished gallantry in action during the late war....The Iowa Gold Democrats have nominated a full state ticket, headed by John Cliggett for governor....The state executive committee of Ohio Gold Democrats has decided to put an independent ticket in the field....Hon. Isham G. Harris, United States senator from Tennessee, died in Washington.....The four hundredth anniversary of the departure of Vasco da Gama, for the Indies was commemorated at Lisbon, Portugal, by the opening of a new geographical institute....Austria-Hungary has presented a note to the Porte, declaring that unless a day is appointed for the Turkish military commission to discuss with the European attachés the strategic frontier proposed by Europe, the ambassadors will request their respective governments to adopt energetic measures....The queen regent of Spain has pardoned 108 Cubans who had been deported to the Spanish penal settlements.

Friday, July 9.—President McKinley will spend his summer vacation on Lake Champlain, leaving Washington, with his family, August 1 ....Twenty thousand delegates are now attending the international Christian Endeavor convention in San Francisco....Mrs. Mary E. Lease, the Populist orator, says the silver question is "an issue of the past"....The London *Pall Mall Gazette* says that owing to the drought in New South Wales and South Australia it will be necessary to import thousands of tons of California wheat....A collective note from the Powers was presented to the Turkish government demanding a cessation of the obstruction of the peace negotiations.

Saturday, July 10.—The reply of Japan to Secretary Sherman's note answering the Japanese protest against annexation of Hawaii was received at the State department....The strike of the coal miners appears to be gaining in strength....The Italian government is testing a rifle from which eighty shots a minute may be fired without removing the weapon from the shoulder....The latest proposal on the part of the Turkish government is held to indicate that the Sultan does not intend to yield in regard to the frontier question....The Anglo-Egyptian expedition is to be increased by 10,000 men.

Sunday, July 11.—Secretary Bliss will revoke the order of former Secretary Smith relating to pensions for soldiers, who were in the Confederate service before entering the army....Emperor William was accidentally struck on the left eye by a rope while walking on the deck of his yacht at Odde, Norway, causing an extravasation of blood on the eyeball.

Monday, July 12.—The United States bimetallic commissioners had a conference at the British foreign office with Lord Salisbury and other government officials....Efforts are being made to settle the miners' strike by arbitration; more mines were closed; the price of coal is steadily advancing....The Christian Endeavor convention, which closed at San Francisco was declared a complete success....It is stated that the British and French ambassadors to Turkey are about to be recalled, owing to dissatisfaction with their conduct in connection with the peace negotiations.

Tuesday, July 13.—Great preparations are being made at Toronto for the entertainment of the Epworth League Circles; twenty thousand members are expected....Preparations are also being made for the reception of the British Science Association, which meets at Toronto next month.

INQUIRIES ANSWERED

Please state if the President of the United States has a fund which he can draw upon at any time for secret service expenditure.

Yes, the President has available at his call a sum or sums to enable him to meet unforeseen emergencies or necessary expenses in connection with the public service. These disbursements may become necessary in the execution of the Neutrality Act, or to meet the unforeseen needs arising in the Diplomatic and Consular service, and to extend the commercial or other interests of the United States. The legal authorization of this power to draw upon the national exchequer occurs in Sec. 291 of the Revised Statutes, which reads as follows: "Wherever any sum of money has been or shall be issued from the Treasury, for the purposes of intercourse or treaty with foreign nations, in pursuance of any law, the President is authorized to cause the same to be duly settled annually with the proper accounting officers of the Treasury, by causing the same to be accounted for, specifically, if the expenditure may, in his judgment, be made public; and by making or causing the Secretary of State to make a certificate of the amount of such expenditure as he may think it advisable not to specify; and every such certificate shall be deemed a sufficient voucher for the sum therein expressed to have been expended."

Kindly give me some account of Mary E. Wilkins, the New England novelist, in your valuable magazine.

Mary Eleanor Wilkins was born about the year 1865, at Randolph, Mass., and was educated at Mt. Holyoke Seminary. Her father was a native of Salem, and through her mother, a Miss Lothrop, she is related to the historian Motley. She was early left an orphan, and about ten years ago began to write magazine stories, descriptive of New England life, which in time brought her into fame. One of her earliest efforts, "A Humble Romance" (1887), discloses her field of work and method, a simple plot, with strong delineations of New England character. Her studies are those of the impressionist school, and are powerfully depicted, and realistic in their development. Beneath the self-repression and reserve of her personality she finds, with delicate insight, ardent human hearts working out their pathetic and often tragic career. "A New England Nun" (1891); "The Pot of Gold" (1892), a collection of whimsical stories for children; "Young Lucretia and other Stories" (1892); "Jane Field," a novel (1895); and "Pembroke," are her chief productions. The latter, and "Madelon" (1896), are her two most sustained novels. She has also written "Giles Corey, Yeoman" (1893), a Salem witchcraft tragedy in six acts, and "The Long Arm" (1895), a $2,000 prize story offered by a publishing syndicate.

As a member of the Home University League and a constant reader of your instructive magazine, I would like to ask the question: Is Immigration a benefit to this country; if so, in what way?

This subject has already been discussed in our pages (see especially the number for June last, p. 270, Vol. V.), though from a somewhat different point of view. We however append the following, since the topic appears at present to be exercising the public mind.

The character and volume of the immigration determines whether or not it is a benefit to this country. There are two classes of immigrants we are receiving into our Republic, which may be designated as the desirable and the undesirable. Among the former class we find many that make our best citizens, but in the latter class we find the ignorant, the pauper, the diseased and the criminal. There is another class of immigrants which have been called "emigrants for revenue only." They come to this country with no thought of becoming citizens, but simply to earn a few hundred dollars, which in their own country would be considered a competence, and then return to their native land. They make their earnings here not by demanding and receiving the American workingman's wages, but by living in squalor and saving every dollar, contributing nothing to the support or prosperity of the country which has enriched them. The millions of thrifty immigrants who have come to our shores and settled here, and helped to build up our country, and who have become naturalized and prosperous citizens, are, and while they live, will be a benefit to our country.

There is still much room for industrious and competent immigrants, and there need be no fear, from the present outlook, that the institutions of the country will suffer from such additions to our numbers. It is from the arrival of the undesirable classes that there is cause for alarm, and it is from the rapid on-coming of the large numbers of this latter class that the thoughtful minds of the present time foresee the great danger in the future for our working-

classes. The evils of unrestricted immigration are perhaps best seen and most fully realized at such a period of financial depression as that through which we are now passing. It seems almost unnecessary to point out the connection that this immigration question has with the problem of the unemployed, which we are trying to solve to-day. We are told that there are now in this country between 1,000,000 and 3,000,000 workers out of employment, according to various estimates, and everywhere we are trying to provide work for these people; yet our gates are still open to a streaming immigration of people for whom we have no responsibility to provide, and yet who must become a burden upon philanthropical citizens.

The illiteracy of a great portion of the class of immigration which we are now receiving from Italy, Poland, and Austria-Hungary, is also a source of no little danger to the country. The danger is aggravated by the fact that many of our recent immigrants do not try to assimilate with us or to become Americanized, but live in colonies by themselves, speaking their own language, and keeping all their own customs, unaffected by the higher civilization around them. The safety of this country depends upon our assimilating and Americanizing all these heterogenous elements. Untold harm is done by the importation of foreign ideas and customs from the slums of Europe, in the moral and sanitary condition of our large cities. The numerous riots and disturbances of the last decade prove that such conditions are in the highest degree objectionable. In such disturbances the Anglo-Saxon element has almost unanimously been found on the side of law and order. These evils can be directly traced to the influence of the lower classes of foreigners. The congregating of this element in our large cities is also a great hindrance to the much-needed reform of city government, and indirectly of State and national government.

We may infer from these and other facts that immigration, though it has greatly benefited this country in various ways, has not been altogether an unmixed good, and there is need of wise legislation to control the present aspect of the problem.

You will oblige an appreciative reader of SELF CULTURE if you will kindly answer where I can get information on the Crusades, if possible from a French point of view. Also, please explain why the room connected with Westminster Abbey is called the "Jerusalem Chamber."

1. We cannot, perhaps, suggest any more useful source to you than the translation of Michaud's "History of the Crusades," which you can procure (price $1.25) from George Routledge & Sons, W. 23rd Street, New York. It is still the best work on the Crusades from a French point of view. For English works, the best summary is that by the writer of the article on The Crusades in the Encyclopedia Britannica — the Rev. Sir G. W. Cox. The work is issued (price $1.00) in the Epochs of Modern History series, by Longmans, Green & Co., Fifth Avenue, New York. The historian Gibbon wrote a work on the Crusades, which may be procured in this country (price 75c.) from Fred'k Warne & Co., Fourth Ave., New York. An interesting work is the German Von Sybel's "History of the Literature of the Crusades," of which there is an English translation by Lady Duff Gordon. Consult, also, the volume on the Crusades in "The Story of the Nations' Series," and see the article on the subject in the Encyclopædia Britannica, and the list of books appended to the article. There is a further interesting volume in the Bohn Library of contemporary "Chronicles of the Crusades" (price $1.50), to be had of The Macmillan Co., Fifth Avenue, New York. See also the historical works on France, chiefly the volume on "Mediæval France," by Gustave Masson.

2. The Jerusalem Chamber adjoining Westminster Abbey, dates from the year 1386, and is supposed to derive its name from tapestries, with the history of Jerusalem on them, which hung on its walls. In this room the divines met who prepared the recent Revised Version of the Bible.

A friend and I are engaged in collecting *bon mots*, famous sayings, apothegms, etc., and crediting them to their historic or literary source. I subjoin a few which we are unable to trace home. Will SELF CULTURE assist us with the authorship of the following:

(1) "I always get the better when I argue alone."

(2) "Life would be quite tolerable, if it were not for its amusements."

(3) "I have made ten discontented and one ungrateful."

(4) "You find people ready enough to do the Samaritan without the oil and two-pence."

(5) "Our deeds determine us, as much as we determine our deeds."

(6) "Few are qualified to shine in company, but it is in most men's power to be agreeable."

(1) Oliver Goldsmith, of whom Dr. Johnson wrote, "No man was more foolish when he had

not a pen in his hand, or more wise when he had"; (2) Sir George Cornwall Lewis, English statesman and Chancellor of the Exchequer (1855); (3) Louis XIV. of France. The King was accustomed to say, when he made an appointment to office, "*J'ai fait dix mécontents et un ingrat;*" (4) Sydney Smith; (5) George Eliot in "Adam Bede" (Book iv., c. 29); (6) Dean Swift, in "Thoughts on Various Subjects."

The Scriptures tell us that, after the Exodus, the year was to begin for the Jews at Abib or Nisan, that is about our month of April. What month, pray, had been the beginning of the year with the Jews before this era, and what is the authority for knowing this?

Among the ancient Israelites the civil year began with the first new moon, following the autumnal equinox in the month of Tisra (near October 1st.), after completing the in-gathering of the fruits. This is generally imagined to have been the time of the creation of the world and the ancient commencement of the Jewish year until the period of the Jewish emancipation from Egyptian bondage. This deliverance having been accomplished at the vernal equinox in the month of Nisan or Abib, the Jews in order to solemnize the memory of this event as a wonderful manifestation of Providence, regarded the date of the Exodus as the beginning of their ecclesiastical or sacred year. In civil affairs, and in the regulation of the jubilees and sabbatical years, the Jews still reckon from the ancient or civil year, which begins with the month of Tisra, near the time, as we have said, of the autumnal equinox.

Their various religious observances are fixed from the vernal equinox or beginning of the sacred year. The six divisions of the natural year mentioned in Genesis, VIII., 22,—namely: "seed time and harvest, cold and heat, and summer and winter," were adopted by the Jews and are observed to this day by the Arabs and other Eastern peoples. Since the Exodus the Jewish nation has two years—the civil year and the sacred or ecclesiastical year—and each is divided with reference to the different periods of their commencement. All religious movable feasts are fixed from the vernal equinox, or month of Nisan. In civil affairs, reference is made to the ancient year beginning in October or at the autumnal equinox.

The authority is Josephus, the ancient Jewish historian. In his work, "Antiquity of the Jews," Book III., ch. I., also, Book I., ch. I, section 3, he explains the two Jewish years. See, also, the article on the calendar in the Encyclopædia Britannica, Vol. IV., pp. 677–80.

Will you please tell me what difference, if any, there was between "spherical case shot" and "Shrapnel shell" as used during the Civil War? Was there any difference between canister shot and spherical case-shot except in shape?

The Shrapnel shell is a general term for all kinds of explosive shells. This form of shell was invented by General Shrapnel, and consists of an envelope containing a number of small balls and a bursting charge, which, by means of an inserted fuse, is exploded at a proper distance from the muzzle of the gun. The sperical case-shot is a form of Shrapnel shell. This form of Shrapnel was used during the late Civil War. It consisted of a shell filled with lead balls or musket bullets, and a charge of powder sufficient to burst it. A fuse is fixed to it by means of a wooden sabot, by which the charge is ignited, and the shell is burst at any particular instant or place. This sabot is used with all spherical fused shot to keep the fuse away from the powder charge.

There is no similarity between spherical case-shot and canister. The former is an explosive shell, throwing out its enclosed bullets at the moment of explosion and at any distance from the muzzle of the gun. Canister is similar to grape-shot, and consists of bullets arranged in a tin frame or canister, and when the gun is fired the frame bursts and the shock of discharge causes grape-shot and canister to break up and scatter at the muzzle of the gun. Canister and grape-shot are used for firing at short ranges, Sharpnel and spherical case-shot for long distances.

Will you kindly give me the date of the heated debate in the United States Senate between James G. Blaine and Roscoe Conkling, during which angry words passed between them?

The *rencontre* in Congress between Blaine and Conkling, which made them enemies for life, occurred in 1866 in the House of Representatives in the Thirty-ninth Congress. The altercation was provoked by the discussion in the House over the bureau of the Provost-marshal-general, Mr. Conkling holding that the office was an unnecessary one and at the time unworthily filled. Mr. Blaine took the opposite side. The dates of the outbreaks between the two representatives are April 24th and April 30th, 1866. You will find an account of the *fracas* in Moore's "The American Congress (1774–1895)," pages 453–455.

Please give a list of appropriate subjects for a political oration — an oratorical contest.

Our correspondent will find much material for his purpose in Bryce's "American Commonwealth" and the native works on the Constitution. The following are a few suggestions:

The remarkable development of the Financial Power of the United States; Origin and History of the Monroe Doctrine; Advantages of a Republican form of Government; The Faults of American Democracy; Why the Best Men do not enter Politics; A Common Citizenship for the English-speaking Race; Should we annex Hawaii and Cuba? Should we continue to encourage Immigration? Compulsory Voting; Educational Qualification of Voters; Free Trade *v.* Protection; Civil Service Reform; Lynch Law and the Death Penalty.

Kindly inform me of the best books of reference for the present time on the following countries — Greece, Russia, France, Germany, Austria-Hungary, England,— also on the Island of Crete, if there is such a book. I want works that treat of history, people, and customs.

Appended is a list of works on the general and contemporary history of the countries you name, which you will find useful to procure or consult, in addition to the Encyclopædia Britannica. We would also direct your attention to a valuable compilation, recently published in five octavo volumes — Larned's "History for Ready Reference." Perhaps of most practical worth, at a modest price, is the series of books "The Story of the Nations" (G. P. Putnam's Sons, New York). You will find in the series (price $1.50 each) volumes on Greece, Russia, Germany, and Hungary.

For modern text-books on European nations, consult The Student's France, the Student's Modern Europe, and Lewis's Germany (price $1.50 each), published by Harper Brothers, New York. On English history, dealing with the modern period, and on social, political and industrial life, see Justin McCarthy's "History of Our Own Times," with additions to 1894 (2 Vols., $3), American Publishers' Corporation, 318 Sixth Ave., New York. See also Escott's "England, Her People, Policy, and Pursuits," and Taine's "Notes on England"— Henry Holt & Co., New York. For recent information on Crete, you will have to consult contemporary English magazines at some well-equipped public library.

I ask for some assistance in enabling me to discuss the question, "Resolved: That environment has more to do in forming character than heredity." Please give me some points and greatly oblige.

You may find some points on the affirmative side of your question for debate in the following thoughts:

It is undoubtedly true that do what we will, labor as we may, the immutability of species, or what we call in man heredity, has established beyond a possibility of doubt that an apple cannot be cultivated into a peach. Once an apple, always an apple. That is the power of the transmitted tendency of heredity. That is the foundation of the building. But there is another side to consider. Plant your apple trees in hard and rugged soil; give them too little light and too much rain; set the rows too closely together or in close contact with trees of unlike growth and cultivation; in short, trust your fine apple trees to "chance luck," on a barren farm, ignorantly managed, and the best apple trees in the world will not remain so for many years. The apple will not degenerate into a potato, however; the unchangeableness of species will attend to that. But they will undoubtedly become sour, knotty and hard: they will be poor and few in number. Environment will have its influence in the nature of the fruit borne. Suppose the same trees had been nourished intelligently, had been fertilized and pruned (not after they had been ruined, but from the start); had been dug around and carefully trained and nurtured; the result in the fruit produced would have been quite different. It is quite true that apple trees cannot be cultivated to bear malaga grapes or fruit of a higher kind than the apple, but the latter fruit may be cultivated to the extreme possibility of the nature of the production, or it may be neglected and shiftlessly nurtured in ignorance of the laws of nature to a degenerate sample of itself. Heredity will still hold its own, and the kind of fruit was determined at birth (if we may be permitted the form of speech), but very much of the quality of the fruit will depend upon the conditions under which it grew — namely, the environment.

Hence while it is true that our heredity is as certain as the eternal hills, it is, however, equally true that the power of environment, the conditions under which we develop or restrict our inherited tendencies, will determine in a very large part the character of the individual.

It is fair to assert that environment cannot create what is not within the individual — that heredity has fixed this. But that environment does and must act as a tremendous power to develop and to control the inheritance which

parents stamp upon their children. It is the vital influence in the production of character.

Moral and intellectual character may be said to be formed out of two elements — temperament (heredity) and circumstances (education and environment), and no doubt the latter element is the greater instrument in the formation of character. The difference between human beings living in a savage and a barbarous state of existence and those living under the influences of civilization, is a strong proof of the power of surroundings upon the natural instincts of mankind.

Be good enough to tell me, through your interesting magazine, what is known of the secret process by which the Turks cure figs.

There is no secret or special process employed by the Turkish fig growers in preparing their product for the market, except what comes of great care in cultivation, time of picking, packing, etc. The saccharine substance of the cured fig is of natural origin. When ripe, the figs are not left to dry and shrivel on the trees, but are plucked by hand from the trees to prevent their being bruised, placed on light perforated trays, and exposed to sun and air, great care being taken to protect them from rain and dew. They are designated either as "natural" or "pulled." The former are left to dry in their natural form, and are packed without compressing their shape. The latter, which are the finest, are uniformly kneaded and flattened during the drying process, and are packed in layers with considerable compression, in the small boxes so often seen, or in rush baskets. If the flattening process is carried to an unreasonable degree it causes the fruit to split, when its quality deteriorates. The merits of a good fig are a thin skin, the seeds visible through it, and the pulp dark and luscious. These are the qualities which distinguish the best Smyrna figs, which are always "hand-picked." The high relative market value of the Smyrna fig comes also from the soil and climatic conditions of Asiatic Turkey, especially in the vicinity of Smyrna, which renders the fruit of the fig tree of superior quality.

Oblige by informing me whether the Speaker of the House of Representatives has a vote; if so, is it customary for him to use it?

Yes, the Speaker usually votes on important measures, and there is no impropriety in his doing so, as he is a member of the House, and has the interest of the constituency which elects him presumably at heart. The Speaker often leaves the chair to speak and can do so for any purpose whatever. The Vice-President (the Speaker or presiding officer) of the Senate can vote only in case of a tie; but the president *pro tem.* of the Senate always votes.

Will you oblige by replying to the following queries: (1) Was W. F. Cody (Buffalo Bill) ever Governor of Nebraska? (2) Was Chauncey M. Depew U. S. Minister to Japan some thirty years ago? (3) Under what heading in the Encyclopædia Britannica shall I find information about the pineal gland?

(1) W. F. Cody ("Buffalo Bill") *never* was Governor of Nebraska. In 1872, he was elected a member of the Nebraska Legislature, and served for a short time.

(2) Yes, Chauncey M. Depew *was*, for a brief while (in 1865, we believe), Minister representing the United States to Japan.

(3) Medical science knows very little about the pineal glands, as they seem to be ductless and abortive. What the E. B. has to say of them, you will find in the article on Anatomy, vol I., pages 876–7.

Pray oblige a subscriber with the origin and meaning of the following popular appellations of states: Buckeye, Lone Star, Old Bay, Mormon, Flowery, Keystone, and Empire States.

BUCKEYE STATE — Ohio, so named from the Buckeye tree (*Æsculus flava*) — horse chestnut — which flourishes extensively within its borders.

LONE-STAR STATE — Texas, so called from the device on its coat of arms — a single or lone star.

OLD BAY STATE — Massachusetts, called so because previous to the adoption of the Federal Constitution the state was known as "The Colony of Massachusetts Bay."

MORMON STATE — Utah, from the settlers who first gave the territory prominence professing the Mormon faith.

FLOWERY STATE — Florida, from the Spanish word for blooming (Florida), though the name of the State is supposed to be derived from "Pasqua de Flores," or Feast of Flowers (Easter-day), upon which day the State was first discovered.

KEYSTONE STATE — Pennsylvania, an appellation bestowed on this State because it was the seventh or central one (the keystone of the arch) of the original thirteen States.

EMPIRE STATE — New York, so called since it is the most populous and wealthiest State in the Union.

Pray will SELF CULTURE inform me upon what grounds did the International Commission decide against Great Britain in the Geneva award?

The Geneva Tribunal Commission based its award against England, in the *Alabama* case, and mulcted Great Britain in $15,500,000, as a set-off against the United States claims for compensation for injuries caused by *The Alabama*, *The Florida*, and *The Shenandoah*. The sum did not cover "indirect claims" (these were ruled out of court as being contrary to international law). The ground of the award was Great Britain's responsibility for the losses inflicted on American commerce, in consequence of these cruisers having been built for the Southerners in England and were suffered to leave an English port on the flimsy plea of trying their speed, while they proceeded to take on seamen and armament at sea and then commence their depredations upon a friendly power. England, it was held by those who argued her case before the Commission, acted in good faith; but this plea did not avail in presence of the fact that *The Alabama* and her consorts were suffered to depart, though the United States representative in the country called the attention of the authorities towards the intended service to which those vessels were to be put. The contention was that England did not use due diligence to prevent their leaving the port of a neutral power, and so was held responsible for the depredations committed. The award was given in September, 1872, and the money was paid over a year afterwards.

Please tell me what is the latest work on Archæology of a popular kind, that would give me the results of discovery and research in Bible lands.

You will find considerable material, of high interest, in a little volume (price 50c.), published by D. Appleton & Co., New York, entitled "The Story of Extinct Civilizations of the East," by R. E. Anderson, and in Miss Amelia B. Edward's translation of Maspero's "Manual of Egyptian Archæology and Guide to the Story of Antiquities in Egypt" (price $2.25), G. P. Putnam's Sons, publishers, New York. See, also, "The Story of the Nations Series," issued by the latter publishers — particularly the volumes on Media and Babylon, Assyria, Phœnicia, Chaldea, and Ancient Egypt. Consult the article on Archæology in the E. B., the article on Prof. Sayce, the eminent Anglo-Assyrian archæologist in SELF CULTURE for July, and those on Babylonia and Egypt in SELF CULTURE for June and July, 1895.

I desire to become a sailor in the United States navy and should like to know to whom to apply for information about the training-ship "Saratoga."

The way to proceed if you wish to become a sailor in the United States service is to make an application for enlistment as an apprentice for service in the navy. Enlistment and training of apprentices for the navy is conducted under the direction and supervision of the Bureau of Navigation at Washington. Boys begin as apprentices between the ages of fourteen and seventeen years, and continue until they are twenty-one years. Enlistments must be made on board such receiving ships as are set aside by the department for the purpose. They are stationary, and are called training or school ships.

There are certain qualifications (aside from the proper age) which are essential in the character of a candidate for apprenticeship. These necessary qualifications, together with other requirements, are issued in printed form for the filling out and signature of the applicant and parents, or guardians. This printed form is furnished to the applicant by the commanding officer of the ship upon which the enlistment is to be made. Address your letter to the "Commanding Officer of the Training-Ship 'Saratoga.'" The form must be filled out in answer to interrogations contained in it and returned to the same officer, who then submits it to Board of Examining Officers of the ship for approval. If you are accepted for enlistment you will get further directions from the headquarters of the training station. Ask also for a copy of the "Routine and Regulations" for apprentices on board the "Saratoga," and you will learn from this the nature of the discipline, duties, courses of instruction, etc.

We cannot tell you much concerning the training-ship "Saratoga," but you will learn all you desire to know, together with the other information you are in quest of, by applying as we have directed. Apprentices are not expected, we understand, to furnish any of the equipments for service.

I have in my reading come across repeatedly of late the term "lese-majesty." Kindly state in your instructive pages what the phrase precisely means.

Lese-majesty (leez-maj'es-ti) signifies high treason, and, in law, any crime committed against the sovereign power in a State. Our

English word lesion — a hurt, wound, or injury, comes from the same Latin source as *lese*, sometimes written *leze*. Lese-majesty denotes therefore a hurt or wrong done the king, or an act of rebellion, usurpation, or defamation directed against sovereignty. In Roman law the term signified an offense against the majesty of the Roman people. Stubbs in his "Constitutional History of England," says that "the contriving, or counselling, or consenting to the king's death, or sedition against the king, are included in the crime of lese-majesty. In Germany, under the present autocratic régime, prosecutions have been frequent for this offense.

I am having a little trouble in separating zinc from mercury after amalgamation, and would like to know a practical way of effecting this. I have tried acid to separate them, but have not had good results. Would you kindly suggest a remedy?

We think your difficulty in separating the zinc and mercury, in your work of amalgamation, arises from an inaccurate mixing of the compound used. A very careful measurement of acid in proportion to water and mercury must be observed. Certain acids, we know, are not so successful in their results as others. The following process, as bringing about the best results, is recommended:

Take a jar and put in water, in the proportion of ten parts water to one part sulphuric acid, and enough mercury to cover the bottom. This done, dip the zinc plate in the solution and let it remain until coated with mercury. Then lift it from the solution and turn the other portion of the plate into the mixture and allow it to stand until perfectly covered with mercury. If the entire surface is not coated over, the portions should be scraped or sandpapered and returned to the diluted acid when mercury will be attracted to the parts.

This operation we believe works successfully. Nitric acid may also be used in the same proportion instead of sulphuric acid, but in that case the coating of mercury will be thinner, and will require the immersing of the zinc several times before a sufficient amalgamation is produced. In using nitric acid, the mercury should be dissolved in the acid, adding sufficient water so as to make a ten per cent. solution.

Kindly inform me, through the Inquiry Department, where I can obtain the best publication which defines and gives the pronunciation of foreign words and phrases.

We know of no publication in English corresponding, for instance, to the German *Fremden-wörterbuch*, explaining the meaning and pronunciation of foreign words and phrases in German, except such as is found in the supplementary departments of the standard dictionaries. There is a useful little work published by G. P. Putnam's Sons, which gives foreign words and phrases and their definitions in English, but does not give their pronunciation. It is entitled "A Dictionary of Foreign Phrases and Quotations," being a treasury of reference for writers and readers of current literature. It is grouped in sections, having a Latin, Greek, French, Italian, Spanish, Portuguese, and German section, and in each case the words and sentences are accompanied by their English equivalents. The work is edited by R. D. Blackman.

There is still a larger and more complete work — "The Stanford Dictionary of Anglicized Words and Phrases," published by the Cambridge University Press. This work is on a more scholarly plan, giving the history of words, their derivation, etc., with both meanings and pronunciations in English. New York: The Macmillan Co., Publishers. We would recommend this work as a most useful one.

Another work answering the purpose well, though it is large and contains much unnecessary detail, is — "Familiar Quotations from Modern Languages," published by Lippincott & Company, Philadelphia. This gives both definition and pronunciation in English of familiar phrases from modern languages.

Still another work, giving the meaning of foreign words and phrases from modern languages, without pronunciation, is one entitled "Polyglot of Foreign Proverbs," comprising phrases from all modern literary languages, with English translations by Henry G. Bohn. The Macmillan Co., New York, Publishers.

I desire to communicate with the following British women novelists. Pray can SELF CULTURE give me their addresses — Marie Corelli, Florence Warden, Miss Braddon, Mrs. Humphry Ward, and the novelist who writes under the pen name of Ouida.

Marie Corelli may be addressed at 49 Longridge Road, London, S. W. Florence Warden is now Mrs. F. James. Her present address is unknown to us. Miss Braddon (now Mrs. Mary E. Maxwell) may be addressed Lichfield House, Richmond-on-the-Thames, Surrey, and Mrs. Humphry Ward at 25 Grosvenor Place, London, S. W. "Ouida" is known as Md'lle

Louise de la Ramé, and may be addressed at Florence, Italy, or care of her London publishers — Chatto & Windus, Piccadilly.

I desire very much to see discussed in SELF CULTURE the morality of industrial monopolies, and should like an answer, in the meantime, to the query: "Is competition healthy, and what are its safe limits?"

The question you desire to have discussed is one which has been greatly agitating the public mind of recent years. The people have become thoroughly alarmed at the enormous economic and political power wielded by great combinations of capital, and have tried to curb this power by anti-monopoly laws. But the laws have utterly failed in their purpose, for the process of monopolizing industry goes on with ever-increasing force. If we trace the origin and growth of our present monopolies, we cannot but realize that they are the inevitable result of the march of modern progress. We may say that the steam-engine, the railroad, and the telegraph, have created and are keeping in operation our monopolies. A hundred years ago, when society had no steam-engine and very little machinery, goods were manufactured with hand-tools in small shops and at home. Each workman could make the completed product, and it was very easy for any industrious and intelligent man, who had served his apprenticeship, to get necessary tools, set up an independent shop, and become his own master. There were no railroads or steamships, and goods were necessarily marketed near their place of manufacture.

Towards the close of the first quarter of this century the steam-engine was perfected and immediately there ensued a great change in industrial methods. The steam-engine was followed by a marvellous development of machinery. Machine-made goods were cheaper than those made by the old-fashioned hand methods of the independent hand-worker. Conquered in competition, the latter was speedily driven from the home-shops into the larger factory. Then followed the railroad, the steamship, the telegraph and the telephone, making transportation rapid and communication almost instantaneous. With the new machinery methods, the larger the factory the cheaper became the product. The superior cheapness of large production, together with constantly improving communication and progressively cheapening transportation, was the motive which impelled manufacturers to larger and larger combinations of capital, and, finally, to monopolies and trusts.

What advantages and disadvantages these conditions have brought to the people as consumers constitute to-day a question of large and increasing importance, and one which we doubt not is destined to play an influential part in politics in the near future. It should be remembered that we are speaking only of the monopolies which exist on the plea that larger production is cheaper production, and now usually called capitalistic monopolies, in contradistinction to those resting on grants of exclusive franchise and operated by special legislative privileges, such as railroads, street railways, telegraphs, telephones, electric and gas-lighting plants. These are the *natural monopolies* in which real competition is made impossible by exclusive franchise right to occupy certain locations, and by the peculiar nature of the industry.

In weighing the advantages and disadvantages of monopolies not based upon special grants we note that, in spite of current opinion to the contrary, such a monopoly of industry controlling production, the market and prices, does not usually mean an unreasonably high price for goods. In point of fact we are much more likely to have from monopoly a price lower than that which was the rule when goods were made or produced by a large number of independent competitors. For example: suppose we find there are in the field a variety of establishments, large and small, producing an article. Some mills have the finest machinery and are well managed, producing a superior article, while others have inferior machinery, and are badly managed. An establishment of the first-class has a low cost of production. One of the second class has a much higher cost of production. If the large and efficient mills are not able to supply all the demand for the article, the smaller and badly managed mills must be kept at work and the price of the article must be maintained high enough to give the poorest in regular operation its cost of production. Meantime the better mills are making ample profits, for the margin is large between their cost of production and the price fixed by the poorest mill that is kept at work. This large margin of profit tempts the better mills to increase their production.

What follows? Unless the demand for goods is expanding rapidly, in order to find a market for the larger supply, they cut the price, and the manufacturer with the higher cost of production cannot afford to meet the cut, and is consequently crowded out. In other words, the market of the inefficient manufacturer is absorbed by the efficient one, while a new and lower price is established for the consumer. This process is a rapid one. One after another of the poorer mills are crowded out, until a few highly

efficient mills are left in the field. Competition in prices between them ensues, and if the competitors are evenly matched, that is, if their cost of production is about the same, they soon realize that such competition is ruinous to all concerned, and a combination takes place.

In the meantime, while this process has been in progress, the consuming public has been benefited by the falling price, due to the crowding out of the inefficient and small producers. When combination finally takes place, the price is almost invariably raised, but it is established on a reasonably stable basis. Frequently, during the struggle before combination, prices were at times abnormally low and usually made so at the cost of the laborer, whose wages was the only thing left to cut. The rise of the monopoly price and accompanying stability usually benefits the laborer.

The process here sketched is almost invariably the history of the capitalistic monopolies. But there is a natural limit to the sway of the power of monopolies. The strongest combinations of capital are subject to competition. The moment a manufacturing corporation attempts to fix an abnormally high price, that high price tempts competitors into the field and thus the avarice of the members destroys the monopoly itself. Thus in considering the *pros* and *cons* of the question we must recognize that monopoly is, as a rule, beneficial to the public, in that it produces goods in the most economical way, and sells them at prices which return a large profit to the makers, perhaps, but which nevertheless puts them in the hands of the consumers at a lower cost than if they were made by a large number of independent producers. The economical justification of monopoly, in comparison with smaller competitive establishments, is the production of a large quantity of goods with a given amount of capital and labor—proving that production is cheaper on a large scale than on a small one.

It is true, nevertheless, that monopoly has features which are less admirable. It puts large power into the hands of a few industrial leaders, and it would be surprising if this power were not often abused. These abuses, it is however manifest, can be prevented by proper legislation. But experience and sound theories alike seem to indicate that, in the case of capitalistic monopolies, the constant possibility of competition, if the price of goods is unduly raised by combination, or if unjust conditions are imposed, goes far towards securing the public against unfair treatment. From this point of view, with the power of legislation in the hands of the people, we think the public has little to dread from the growth of the capitalistic monopoly. It is otherwise with the natural monopolies, above mentioned, which we believe should either be put under the most rigid public control, or public ownership should be insisted on and rigorously enforced. We have no space left to speak of the corruption of public officials, and the prominent part the pernicious evil plays in bringing about a misunderstanding of the subject of capitalistic monopoly. That we may take up in SELF CULTURE on some future occasion.

Will you please tell me in SELF CULTURE when and why the late President (Cleveland) came to be called the "Man of Destiny;" also inform me of the origin of the phrase. What, also, is the meaning of the term "Grass Widow?"

The phrase, "Man of Destiny," was applied to Napoleon Bonaparte, who believed himself a chosen instrument of destiny, and thought that all his actions were guided by fate. On Grover Cleveland the term was also bestowed, at a public banquet in Buffalo in the spring of 1883, in allusion to the rapid rise of Mr. Cleveland in the political world and to the high position, it was believed, he would one day attain.

"Grass Widow" is a corrupt use of the phrase "*grace* widow"—that is, a widow by grace or courtesy, not in fact. In this country, the phrase means either a divorced wife or one separated from her husband.

I have somewhere read that it was an Englishman who, during the Revolutionary War, very materially aided our government financially in a crisis of the struggle. Can you inform me who he was, and give me some facts in his career?

You refer, no doubt, to Robert Morris (1734-1806), the financier of the Revolution, a sketch of whose life you will find in the Encyclopædia Britannica (Vol. XVI., page 846). Morris was born in Liverpool, England, and came to this country with his father at the age of thirteen and entered a Philadelphia counting-house, in which he afterwards became a partner. He was a delegate to the Continental Congress and one of the signers of the Declaration of Independence. He founded the Bank of North America and was for some years government superintendent of finance. Throughout the war he heartily aided the government in its financial difficulties and pledged his personal credit, at one time, to the extent of one and a half million dollars, to defray the cost of supplies for the army. In 1781, indeed, the campaign of that year could not have been carried on without Morris's aid. In his later years he was unsuc-

cessful in land speculations and lost his immense fortune, and was actually permitted to be imprisoned for debt.

[CORRESPONDENCE.]

THE NEGRO AS A SLAVE AND AS A FREEMAN

Under the above heading, in the June number of SELF CULTURE, Mr. Joseph M. Rogers has written well and impartially. His points are all well taken and well sustained, except two, and it is on these two I wish to say a few words. First, that the wealth of the South is greater now than before the war; and second, that free labor is cheaper than slave labor. So far as statistics show the status of wealth, he may be correct; but statistics fail properly to contrast the two periods. We will take one item to illustrate all. To supply with tin-dippers now as many people as lived in the Southern States in the thirties, I would say, at a rough guess, that it would require a million dollar factory. The people of the thirties used gourds, not tin-dippers, raised them and prepared them at odd times. Gourds are just as truly wealth as tin-dippers, but there was no gourd factory to appear in statistics as so much wealth. At another random guess, I would say that the same people now use one million dollars worth of tin-dippers per year, reckoned in the statistics among the manufactured products. The gourd factory cost nothing and the gourds cost nothing. Now the dipper-drinkers have to pay one million per year for the luxury of using them, while the gourd-drinkers paid nothing,— that is, the dipper-drinkers pay one million per year for the empty honor of being esteemed two millions richer than the gourd-drinkers. In the thirties and even in the fifties, nearly all ploughs, plough-stocks, hoes, wagons, and all farming implements, except chains, were made at home by local workmen. So were all thread, ropes, domestic linens, tickings, leathers, shoes, boots, shoe-material, furniture, carpets, jeans, quilts, counterpanes, etc., wholly or or in part made at home, and are in the category with the tin-dippers. We have some luxuries now that we had not then, but we need much more money now than we did then, and are harder pushed financially. So we cannot look to statistics to tell us whether we are better off now.

In the fifties a man who owned two or three hundred acres with slaves enough to cultivate half of the land, could support his family and get rich without working himself, and buy more land or negroes every year. Now with the same land he cannot live and pay schooling for his children by the use of free labor. Then a man could hire a negro for $200.00 per year, board and clothe him, and make a little; now he does well if he pays $100.00 and board without clothes and come out even. This statement can be verified by nearly every planter in the South who has tried farming on both sides of the war with slaves and with free labor. Then all merchants, traders, and professional men were aspiring to become planters; now all is reversed. I think the *antebellum* southern planters were the happiest, most luxurious, liberal, hospitable, and least aristocratic of all well-to-do or rich people that ever lived. Among them were found few of the suffering poor, and the really destitute were well cared for. Wages were high and the wage-earner was more respected than among any other rich people in America; but those who did menial work, such as blacking shoes, cooking, table-waiting, etc., were little respected. In fact, there were scarcely any of this class, save white hirelings doing regular farm work. Those who ate with their employer's family, if well-reared, moved in good society.

E. H. RANDLE, A. M.

Byhalia, Miss., June 22.

[Rejoinder by the writer of the article.]

In reply to Mr. Randle's kind note of criticism on my article, let me say that space forbids arraying figures and opinions of experts in behalf of my original contention. I could easily show that what I stated is true by quoting testimony exclusively from south of Mason and Dixon's line, as well as from census statistics. The point I called attention to at the same time must not be forgotten, that a social as well as an economic revolution has taken place since slavery was swept away, and that on the surface it is hard to judge. My opinion was expressed after careful study of the subject and without prejudice. I wish, however, to call attention to the tin-dipper question. If the South spends $1,000,000 a year to-day for tin-dippers, whereas it used gourds thirty years ago, it must be because the South has progressed in wealth and taste. It is just as easy to raise gourds now as it was thirty years ago. In youth I used them myself, and if memory serves me correctly, liked them very well until they became too badly soaked. If the Southern people wanted gourds to-day they could get them for nothing instead of paying $1,000,000 a year for tin-dippers just as they can smoke pipes instead of cigars if they wish. The fact that they find it more desirable to drink out of tin cups and are willing to pay for them, shows more wealth and more culture which, though a small instance, is exactly the point I endeavored to set forth.

JOSEPH M. ROGERS.

Kindly tell me, through your Inquiries Answered department, if there is a History of American Literature published equal to Taine's "History of English Literature."

The only history of American literature of which we know anything, that can be said to be as ambitious as Taine's "English Literature," is that projected by Prof. Moses Coit Tyler, of Cornell University. Unfortunately, it does not, as yet, come further down than the peace after the War of the Revolution. The four volumes he has so far published embrace the history of the native literature during the Colonial period (1607–1765) and that covered by the American Revolution (1763–1783). The cost of the four volumes is $11.00, and their publisher is G. P. Putnam's Sons, New York.

The other works, and those that deal with modern authors, are brief manuals, generally for school purposes, perhaps the best of which is Prof. F. L. Pattee's recent epitome. This no doubt you can procure through your local bookseller.

Another tolerably good text-book is that by Julian Hawthorne and L. Lemmon, published by D. C. Heath & Co., Boston. The critical estimate of the Poets, by E. C. Stedman — "Poets of America" (price $2.25), published by Houghton, Mifflin & Co., Boston and New York, is an excellent bit of literary work, uniform with the same writer's "The Victorian Poets" and his "American Anthology."

Consult also the various issues in the series of American Men of Letters, of which sixteen volumes have already appeared under the editorship of Charles Dudley Warner Houghton, Mifflin & Co., publishers. (Price $1.25 per volume.)

I enclose my subscription to SELF CULTURE, presuming that a renewal is an adequate endorsement of the magazine. Were I inclined to criticise, I should take exception to writers in your pages who seem to me at times to make too much of the defects of our modern political and social institutions. There is a marked tendency to find fault with modern historical methods, regardless of the fact that results are superior to theories, and forgetting that it is impolitic as well as inexpedient to quarrel with success. Mistakes of this kind are occasionally to be noted in the otherwise admirable articles of Mr. Joseph M. Rogers. How can one know that the methods adopted for restoring the integrity of the Union were not the best possible? History affords no parallel to the magnitude and intricacy of the reconstruction problem. Prof. Goldwin Smith, too, rather severely criticises the financial methods adopted by Mr. Lincoln's administration to meet the prodigious burdens of the Civil War. The Professor would render a service to many students in political economy by pointing out a better plan that might have been adopted.

Gilman, Ill., June 28. * * * *

We thank you for the implied good words you give to our work in SELF CULTURE. We agree with you that in these times writers are apt to be somewhat pessimistic and carping; but you will admit that this mood is an essential and often a highly valuable adjunct in the publicist, and without it we should go on in a too-easy jog-trot, leaving things pretty much to drift, and be content with the gains and attainments of the past. Is it not well to overhaul things at times, if it were only to upset our complacencies and stop the flow of laudation and brag? Our modern political and social institutions are not in all cases heaven-born, and what is defective in them it is advantageous to have pointed out. It is chiefly by fault-finding that our errors are corrected. It is true, that, in all departments, we have at times a little more of the destructive than of the constructive critic, yet this is an imperfect world and we gain little by complacent contentment. Our new historical methods are, admittedly, an improvement upon the old — they are, as a rule suggestive, and they have made history a vastly more important and interesting study. Mr. Goldwin Smith was, we think, well within the truth in speaking as he did of our finances during the Lincoln régime; they were shockingly bad; nor, obviously, have we got them right yet. The legislature is ever tinkering with them, and this, presumedly, is excused by a consciousness that they need improving. It is the function of the legislative body to reconstruct, that of the critic, if not to cast down, then to point out defects. Thus is progress made and the millennium, in some measure we trust, advanced.

Both Mr. Goldwin Smith and Mr. Rogers, our correspondent will admit, write with competent knowledge of our political affairs, while each is a dispassionate as well as an instructive writer. While they honor us with contributions from their pens, may we not trust their judgment in criticising, since they write with the manifest design of amending rather than with that of finding fault?

ED. S. C.

NEW INFORMATION NOTES

The exports of copper from the United States for the first five months of the year has been as follows: 1894, 32,739 long tons; 1895, 25,615; 1896, 48,521; 1897, 49,509. The total deliveries in Europe for the first five months of 1897 amounted to 89,164 tons.

A small bar or rod of iron, flat at the end, if reddened in the fire and applied for two or three minutes to the head of a rusty screw, will, as soon as it heats the screw, render its withdrawal easy by the screwdriver.

An era of unusual railroad construction seems about to open in Oklahoma and Indian Territories. Twelve lines with a mileage of over 1,700 have been projected, some have been surveyed and others are now under construction.

John Gjers, of the Ayresome Iron Works, Middlesbrough, England, who has patented several inventions relating to the manufacture of iron and steel, has now another device. The object of the new process is to cheapen the cost and improve the quality of steel or homogeneous iron. Mr. Gjers proposed that the pig iron shall be melted upon the bed of a furnace lined with ilmenite or some other rich oxide of iron, but the operation of steel-making itself will be carried out in an ordinary open-hearth furnace.

The merchant marine of the United States on June 30, 1896, comprised 22,908 vessels of 4,703,880 gross tons — a decrease of 330 vessels, but an increase of 68,000 tons over the previous year. Wooden sailing vessels numbered 16,244, of 2,310,819 gross tons. Iron and steel steamers numbered 880, of 1,004,113 gross tons. Vessels documented at the Atlantic and Gulf ports numbered 16,786, of 2,667,313 gross tons; at Pacific coast ports, 1,560, of 437,972 tons; on the great lakes, 2,333, of 1,324,068 tons; and on the Western rivers, 1,229 vessels, of 274,527 tons. Vessels registered for the foreign trade numbered 1,257, of 844,954 tons, of which 244 are steamers. Vessels built and documented during the year number 723, of 227,096 gross tons, or more than double the construction of the previous year. On the great lakes 117 vessels, of 108,782 tons, were built.

The total population, according to the census taken December, 1895, of the German empire, including Alsace and Lorraine, reaches 52,244,503, against 49,428,470 in 1890, and 41,058,792 in 1871. That is to say, the population has increased 27 per cent. since the re-establishment of the empire twenty-five years ago. The kingdom of Saxony in this period has increased 49½ per cent.; Prussia, 29 per cent.; Hesse, 21 per cent.; Saxe-Coburg and Gotha, 24 per cent. Remarkable increases are to be noted in the populations of the two free towns and their dependencies. Hamburg, which, in 1871, had a population of 338,974, has now 681,632, and Bremen has risen from 122,402 to 196,278.

By enactment of Congress, the topographic as well as the geological maps and atlases of the United States Geological Survey may now be purchased by the public. They are now sold at a merely nominal price. In quantities, they may be purchased for two cents each. Lists of the maps may be had on application to the director of the survey.

A rich gold find is reported at Rat Portage, Ont. The find was made in a new shaft of the Dominion Gold Mining Co., at a depth of ten feet The quartz is rich almost beyond description. Nuggets, leaf, and wire gold have been found in this shaft. Pieces of quartz broken by the blast are said to have been found hanging together by strings of gold. The specimens have been sent to England, where the company's headquarters are located. The news has created great excitement in the gold fields, and prospectors are leaving the other districts and are flocking into Rat Portage.

The scheme of covering the Sahara with forest is pronounced by M. P. Privat-Deschenel utterly impracticable, the arid plateaus being hopeless deserts. On a limited scale, however, the valleys — most of which are favored with a small amount of water — may be successfully planted with tamarisk, acacia, eucalyptus, and poplar, the last-named tree having unexpectedly proven the most suitable. In the forest shelter, vegetables and fruit trees may be grown.

The iron industry in the eastern part of Cuba overshadows all other interests. Two American companies in that vicinity employ 1,400 men, and ship to Pennsylvania mills nearly 50,000 tons of ore per month. The ore is very rich. From 1828 to 1840 Cuba also shipped to this country over $3,000,000 worth of copper ore, but this branch of trade has lapsed considerably American capital was busy in the development of numerous new deposits of manganese ore when the revolution broke out.

At a recent lecture on Diamonds, delivered at the Royal Institution in London, Professor Wm. Crookes said that, thanks to Professor Moissan, the French chemist, diamonds could now be manufactured in the laboratory — minutely microscopic, it was true, but with crystalline form and appearance, color, hardness, and action on light the same as the natural gem. The first necessity was to select pure iron and to pack it in a carbon crucible with pure charcoal from sugar. Half a pound of this iron was put into the body of the electric furnace, and a powerful arc, absorbing about 100 horse power, formed close above it between carbon poles. The iron rapidly melted and saturated itself with carbon.

After a few minutes' heating to a temperature above 4,000°C., the current was stopped and the dazzling, fiery crucible plunged in cold water until it cooled below a red heat. Iron increased in volume at the moment of passing from the liquid to the solid state; hence the expansion of inner liquid on solidifying produced an enormous pressure, under stress of which the dissolved carbon separated out in a transparent, dense, crystalline form — in fact, as diamond. To obtain the diamond from the metallic ingot required a long and tedious process of treatment with various strong reagents, and the specimens thus obtained were only microscopic.

The largest artificial diamond yet made was less than one millimètre across. Many circumstances pointed to the conclusion that the diamond of

the chemist and the diamond of the mine were strangely akin in origin, and the diamond genesis must have taken place at great depths under high pressure. How the great diamond pipes came into existence was not difficult to understand. After they were pierced they were filled from below, and the diamonds, formed at some epoch too remote to imagine, were thrown out with a mud volcano, together with all kinds of *débris* eroded from adjacent rocks. According to another theory, the diamond was a direct gift from Heaven, conveyed to earth in meteoric showers, and the so-called volcanic pipes simply holes bored in the earth by the impact of monstrous meteors.

Of the twenty-three coins authorized by the Government of the United States for use as money since 1792, eleven have been found to be undesirable, and their coinage has been discontinued. Two of the eleven, says an exchange, were gold pieces, four were silver, and five were nickle, bronze, and copper. The coinage of one-dollar gold pieces was authorized by Congress March 3, 1849, and discontinued in September, 1890, the total amount coined being $19,499,337. Of three-dollar gold pieces there were $1,619,376 coined under the act of February 21, 1853, the coinage being stopped in 1890. Trade dollars of silver were authorized in February, 1873 · their coinage was limited to export demand by joint resolution July 22, 1876, and the production was prohibited by act of March 3, 1887; the total amount coined was $35,965,924. The silver twenty-cent piece was ordered in 1875, and stopped May 2, 1878, after $271,000 had been turned out by the mints. One of the oldest of American coins is the silver half-dime, which dates from 1792. Up to February 12, 1873, when its coinage was discontinued, $4,880,219.40 of these half-dimes were produced. The three-cent piece of silver was authorized in March, 1851, and discontinued in 1873, the total coinage amounting to $1,282,087.21.

The old copper cent began its career in 1792, and ended it by legislative prohibition in February, 1857. Twice its weight was reduced, the first time from 264 to 208 grains, and the second time to 168 grains. The total amount coined was only $1,562,887.44, so far as the Mint records show. The three-cent nickle piece dated from 1865 to 1890, the total production being $941,349.48. In 1864 a two-cent bronze coin was authorized, but it was discontinued in February, 1873, after a coinage of $912,020. Of the small nickle cents which were substituted for the large coppers in 1857, only $2,007,720 were minted up to the time of their discontinuance, in April, 1864. There were $39,926.11 copper half-cents coined from 1792 to 1857, inclusive. These coins at first weighed 132 grains, then 104 grains, and finally 84 grains.

The inventor who turns his genius to producing the little things which ease the burdens and care of the housewife not only performs a valuable service for which he should be sincerely thanked, but he often strikes the path that is paved with hard dollars. A Brooklyn man, says "The Inventive Age," has produced and patented a flat-iron that should find its way into the laundry department of the household, as it not only possesses the usual features of this useful implement, but has an attachment that saves labor. This consists principally of a hollow handle supported above the iron by hollow uprights, and a tube leading from the handle downwardly and outwardly in front of the iron. This tube has a nozzle, through which water is forced after coming from the handle of the iron, which is used as a reservoir. The use of the tube and nozzle for sprinkling clothes does away with the use of the basin or bowl, in which the hand must be dipped whenever the sprinkling process must be gone through; and this, with the facility with which this new apparatus seems capable of doing its work, should give it a welcome in the homes of those who have done or do their own washing.

One of the first specimens of the new Chassagne process of photography in natural colors to reach this country has come to Assistant Secretary Adee at the State Department from United States Consul Frank Mason at Frankfort. It is a large photograph of a beautiful American woman taken in Paris. The reproduction of the delicate flesh tints, as well as the more pronounced and brilliant colors of the dress and accessories, including a great vase of flowers, is remarkably true to nature. In his letter transmitting the picture, Consul Mason says that the process marks a distinct epoch in reproductive art.

An explorer recently found in Egypt a bronze bowl and a series of iron tools of forms quite unlike any known in Egypt, and they are thought to belong to an Assyrian armorer about 670 B. C. These tools, comprising three saws made for pulling, not pushing, one rasp, one file, several chisels and ferrules, a scoop-edged drill, two centre bits, and others, are of the greatest value in the history of tools, as showing several forms of an earlier date than was thought possible. They are probably of Assyrian origin.

Within a comparatively short period four new metals have been discovered, Gallium, Scandium, Norwegium, and Uralium, the first three being named after the countries France, Scandinavia, and Norway. Hence there are about seventy elements at present known to the scientific world. Gallium, the earliest discovered of the four above named, has perhaps the most curious and interesting history of any of them. The existence of a metal possessing the properties of Gallium was definitely predicted by M. Mendeljeff, a Russian chemist, in 1871, and previously also by Mr. Newlands. This prediction was based on a study of the relations of the atomic numbers of the known elements, and their ratios of combination with one another. In the seriation which these numbers form certain terms are here and there wanting, and one was missed, having properties between Aluminum and Indium. Mendeljeff minutely described what these properties should be, giving the sp. gravity as 5.9. Several years afterwards Boisbaudran discovered the metal itself in connection with zonic blende from the Pyrenees, and ascertained its sp. gravity to be 5.935. Uraliumis is the latest discovery among the metals, and A. Guyard is the discoverer. It is nearly as white as silver, is very malleable, is almost as soft as lead, and is much more ductile than platinum, with which it is closely related in many respects. Its specific gravity is 20.25; and its combining weight is 187.25.

The most romantic of all numbers is the figure nine, because it can't be multiplied away or got rid of anyhow. One remarkable property of this figure (said to have been first discovered by Mr. Green, who died in 1794) is that all through the multiplication table the product of nine comes to nine. Multiply by what you like, and it gives the same result. Begin with twice nine. 18; add the digits together, and 1 and 8 makes 9. Three times nine are 27; and 2 and 7 are 9. So it goes on, up to 11 times 9 which gives 99. Very good; add the digits; 9 and 9 are 18, and 8 and 1 are 9. Going on to any extent it is impossible to get rid of the figure 9. Take a couple of instances at random. Three hundred and thirty-nine times nine are 3,051; add up the figures and they are 9. Five thousand and seventy-one times nine are 45,639; the sum of these digits is 27; 2 and 7 are 9.

Well-matured bananas that have not begun to decay, says "The Sanitarian," are a very wholesome and nutritious food. No more than that the biggest apples or pears always are the best, are the biggest bananas the finest flavored; on the contrary, the larger they are the more mealy they taste. The cultivation of the banana, although it has in the last ten years assumed gigantic proportions, may still be said to be in its infancy. Almost every part of the plant can be used for some useful purpose; the stalk forms excellent material for the manufacture of paper, or the fibre might be extracted; the peal of the fruit will make excellent indelible ink; the green fruit dried can be converted into wholesome flour. The fruit, when ripe, consists of seventy-four per cent. of water; of the remaining twenty-six parts, twenty are sugar and two gluten or flesh-forming food. Hence, like rice, though exceedingly nutritious, it requires the addition of some more nitrogenous material. Green bananas, boiled tender, if given to the hens, will make them lay more eggs than any other food. Dried bananas, or banana figs as they are called, are now in the market, and will undoubtedly soon be a great article of trade. They are sweet, wholesome, and nourishing.

Egg albumen is again being recommended as a medicine. When the patient is hardly able to pay a doctor's bill, to say nothing of a drug bill, a cheap and handy substitute for fancy invalid foods is desirable. When fever is present and appetite is *nil*, and when we want an aseptic article of diet, Dr. Boynton says, the white of an egg raw serves both as food and medicine. The way to give it is to drain off the albumen from an opening about half an inch in diameter at the small end of the egg, the yelk remaining inside the shell; add a little salt to this and direct the patient to swallow it. Repeat every hour or two. In typhoid fever this mode of feeding materially helps us in carrying out an antiseptic and aseptic plan of treatment. Furthermore, the albumen to a certain extent may antidote the toxins of the disease. Patients may at first rebel at the idea of eating a "raw" egg, but the quickness with which it goes down without the yelk proves it to be less disagreeable than they supposed.

The German agricultural papers say that the imports of American apples into the German empire last year were more than twenty times as large as in any previous season, the shipments in 1896 having amounted to no less than 12,000,000 centners, the centner being equal to a hundred-weight.

It is said that by the end of 1892 about ten tons of diamonds had been yielded by the South African mines, valued at £60,000,000 sterling. They would fill, Prof. W. Crookes stated recently, a box five feet square and six feet high. The annual produce is now about half a ton; and some 8,000 persons, of whom rather more than one-fifth are white, are employed in the works.

A valuable disinfecting compound for purifying the atmosphere, is described in a Berlin journal. Oils of rosemary, lavender, and thyme, in the proportion of ten, two and a half, and two and a half parts respectively, are mixed with nitric acid in the proportion of thirty to one and a half. Simple as it is, the vapor of this compound is said to possess extraordinary properties in controlling offensive odors and effluvia.

Nourishing liquids and drinks can now, it is said, be sterilized by a process which does not alter their flavor. Heat alone is sometimes inapplicable for this reason. M. Kuhn has applied both heat and pressure by the simple process of heating in a closed vessel which retains the vapor, and thus produces a great pressure on the liquid. Milk, beer, cider, and wine are easily sterilized in this way. M. Kuhn's process was fully described to the Académie des Sciences, Paris.

An eminent physician states that typhoid fever can be washed out of the system by water. He gives his patients what would amount to eight or ten ounces an hour of sterilized water. In cases of cholera, where the system secrets a large amount of fluid, enormous quantities of hot water are of great benefit.

The natural antidote for weak nerves is the healthy development of the muscles — that is, of the general muscular system, instead of special muscles only. This can be done only by active exercise in the open air, which thoroughly oxygenates the blood and wastes the muscular tissues, thus preparing them to be replenished from the food elements of the blood. This constant waste and rebuilding are vital processes that measure vitality and efficiency. When these go on healthfully, nervousness is never present, except by some flagrant abuse of the digestive functions, some unwise drain of a vital fluid, or some exhausting tension of the mind. Therefore steer clear of these, and give proper attention to the muscles, and nervousness will be avoided.

Practice appears to vary considerably as to the amount of malt necessary in prepared infants' food, as little as five per cent. being used in some cases. Here is a recipe. Baked wheat flour, ten ounces; ground malt, two ounces; sugar of milk, four ounces. There is no necessity to add phosphates. A more palatable food can be prepared by adding desiccated milk; but this of course is not essential, as fresh milk is always added before use. Dry all the ingredients before mixing by spreading on large flat dishes in a moderately cool oven.

THE WORLD OF THOUGHT:

ABOUT BOOKS AND THEIR AUTHORS

Women Novelists of Victoria's Reign

Under the pleasant sub-title, "A Book of Appreciations," a well-known firm of London publishers, noted for their many and excellent issues in the department of fiction, has made a happy, characteristic contribution to the literature evoked by Queen Victoria's Jubilee. It consists of critical studies of the "Women Novelists of the Reign" by women writers of the time, among whom are the late Mrs. Oliphant, Mrs. Lynn Linton, Mrs. Alexander, Edna Lyall, Charlotte M. Yonge, and others. The chief "appreciations" are The Sisters Brontë, by Mrs. Oliphant; George Eliot, by Mrs Lynn Linton; Mrs. Gaskell, by Edna Lyall; and Miss Mulock (Mrs. Craik), by Mrs. Parr. The book is well-conceived and on the whole admirably executed. There is a certain novelty in setting women novelists to write about women novelists, and we confess we opened the book at first with some misgivings, fearing that we were to be treated, in this era of women movements, to a series of plaudits of the sex and their achievements during the period of a queen's reign, without critical insight or any virile and judicial appraisement. Mrs. Oliphant's contribution was put in the fore-front of the book, doubtless, as we thought, to give assurance of good and sober work within. Whether we should find equally serious and judicious judgment in the other critiques, and especially in the reviews of the minor novelists, and even in the case of George Eliot, was for a time a matter of some disquietude and doubt. It was something to know that the "appreciations" all dealt with deceased writers, and therefore the present judgments might be trusted to be written with no undue personal bias. Happily, our apprehensions were short-lived, for the sumptuous volume was easy reading, and in one continuous sitting we got through the three hundred and odd pages, and, in the main, with satisfaction and, occasionally, with delight. If one misses in the volume a general review of the writers dealt with and the rounding touch of an editorial hand, the work has the charm of variety, besides a distinct interest as coming from a varied group of essayists, each engaged in the art of novel writing.

Mrs. Oliphant's essay on the Brontë Sisters is wholly worthy of the now deceased writer's reputation. It is throughout an admirable study, and gives due honor to the three talented women whose bleak home on the Yorkshire moors was made enjoyable by the exercise of their several literary gifts. To Charlotte Brontë is ascribed genius, though of an untutored kind, and in discussing "Jane Eyre," the chief creation of her brain, she is awarded the doubtful honor of originating the sex-problem novel. Mrs. Gaskell's admirable biography is incidentally given due praise, and much sympathy is felt with the cry of women, like the three lone sisters, who, conscious of their abilities, yearn for the larger life and the busy interests of the world outside. Of the sisters, who are merely Charlotte's satellites, Mrs. Oliphant writes in a kindly though critical spirit, and she closes her sketch with a just protest against the tendency of the time to tear every shred of privacy from the lives of these sombre but remarkable figures in English letters.

Mrs. Lynn Linton's study of George Eliot is wanting in the tender touches that characterize Mrs. Oliphant's study, but it is a clever bit of work and judicious as an appreciation. The writer naturally ranks highly the great novelist's powers, but she is by no means blind to her faults, either as a novelist or as a woman. Socially, she deems her "an insurgent"—referring to her defiance of the conventionalities in her relations with George Henry Lewes—while she is sharp, and even acrid when she speaks of the artificialities of her style in her later works and the crushing out, under a scientific jargon, of the spontaneity and art of her earlier days. "Middlemarch," the writer deems the high-water mark of George Eliot's genius, and throughout the essay she shows an intimate acquaintance with her subject, though, to our taste, is a trifle too patronizing in her manner.

Edna Lyall deals sympathetically with the author of "Ruth," "Mary Barton," and that ideal book, "Cranford," with its most delicate miniature painting of a small, old-fashioned English country town. Mrs. Gaskell's influence in her day was thoroughly wholesome, and in her books, now we fear little read, she displays wide human sympathies and a warm-hearted, impulsive and kindly disposition. The critique is very pleasantly written. Mrs. Parr's paper on Miss Mulock, and Adeline Sergeant's on Mrs. Henry Wood, author of "East Lynne," each extol their subjects and yet preserve a nice balance of judgment. Much the same may be said of Mrs. Macquoid's article on Amelia B. Edwards, who was not only an entertaining novelist, but a notable Egyptologist and archæological devotee. The other "appreciations"

include Mrs. Alexander's study of Mrs. Norton, whose "Stuart of Dunleath" and "Old Sir Douglas" were favorite novels in their day; Charlotte M. Yonge's sketch of Miss Manning, author of "The Household of Sir Thomas More," and other tales drawn from early English history; and Mrs. Marshall's critiques on "A.L.O.E." (A Lady of England), and Juliana Gatty (Mrs. Ewing), whose delightful stories for the young are well known and widely read. The volume, which is a handsome quarto, and replete with good things for the critic as well as the lover of fiction, is imported by the New Amsterdam Book Co., of New York.

Father Kneipp, the Hydropathist

The death the other day at Wörshofen, Bavaria, of Father Sebastian Kneipp, who had made himself famous by his method of treating disease, or preventing the tendency to disease, by applications of water, recalls a unique personality in the history of the healing art. The worthy priest, who was born in 1821, was the founder in a Bavarian village of a flourishing *Kurhaus*, or sanatorium, on the principles in vogue in hydropathic establishments, which under his personal direction, assisted by members of his own charitable Order, was instrumental in effecting many notable cures. His treatment of ailments by the use, internally and externally, of cold water, was in itself no novelty, since the system has been practised for centuries, while cold water applications, in the form of baths, douches, and bandages, have long been recognized as invaluable therapeutic agents. But Father Kneipp's methods were even more radical and comprehensive than those commonly made use of by modern water-cure practitioners. He carried his theories to the verge even of rashness, by enjoining his patients not only to go barefoot, so as to stimulate and restore the circulation, but to wade in water and walk on wet grass or even on fresh fallen snow. His injunction to the sick or ailing, was constant ablutions, and for fractures, inflammations, diseases of the eye, ear, skin, and the joints, as well as for such ailments as colds, croup, diphtheria, asthma, catarrh, diarrhœa, gravel, varicose veins, dropsy, urinary troubles, palpitation of the heart, constipation, pleurisy, and even consumption, his remedy was cold sprays, douches, and water compresses. In some ailments he would resort to vapor or steam baths, occasionally medicated with herbs; but his chief reliance was upon cold water, with water bandages, locally applied, and in the case of delirium from fever, he even recommended the shock of thrusting the feet through a coating of ice in a tub or pond. Cold water drinking was also one of his principal remedies, with plain nutritious food, light clothing, the wearing of sandals instead of laced boots, and the absence of everything, such as stiff, high collars, corsets, and fur hats, that hinders free ventilation, fetters the limbs, and impedes full respiration. English translations of two of Father Kneipp's works are now to be had (London: H. Grevel & Co.), and those who are curious to dip into them will find the author an enthusiast, if not always a safe home physician. The two works by which the good father is chiefly known are: "My Water-Cure," and "My Will: a Legacy to the Healthy and the Sick."

Johnston's Lectures on Literature

For the Catholic Summer and Winter School Library (Akron, O.: D. H. McBride & Co.), Richard Malcolm Johnston has written for the cursory reading of advanced students a series of brief "Lectures on Literature, English, French and Spanish." The volume, which is a handy one for the pocket and very tastefully got up, chiefly deals with early dramatic literature, beginning with the Miracle Plays of the Middle Ages, the Mystery Plays and Allegories of the fifteenth century, and the rise of the British drama, with a glance at the productions of its early representatives, Heywood, Ford, Greene, Marlowe, Ben Jonson, Beaumont and Fletcher, and Philip Massinger. The author presents clearly the transition from the morality play to the regular drama and comments intelligently upon the early playwrights and their satires on the follies as well as the vices of the period. He rightly assigns high place to Ben Jonson and Massinger and properly relieves the latter from the charge of coarseness which disfigures the work of his contemporaries.

Passing to France, the author sketches, in outline, the era of the revival of letters, with a brief study of the essayist Montaigne and allusion to the group of sixteenth century writers. The term *The Pléiade* is applied to those who sought to reform the language and the literature after classical models. Following the mention of these, we have short critiques on the dramatists Corneille, Racine, and Molière, on the fabulist Lafontaine, on the religious writers Bossuet, Bourdaloue, and Massillon, closing with an account of the Encyclopedists—Diderot, Voltaire and Rousseau. This section of the work is instructive as well as highly readable; its tone, moreover, in speaking of the Encyclopedists, is restrained and temperate.

The section devoted to Spanish literature is characterized by like excellence.

G. M. A.

EDUCATIONAL STUDIES FOR YOUTH:

SYNONYMS DISCRIMINATED

TO enable youth to appreciate the nice distinctions in the use of words is a part of modern education unhappily too little considered in these days. And yet how interesting, to the literary student especially, is this branch of study, which will enable him to acquire a knowledge of the most commonly used synonymous words in the English language and gain some idea of their fine distinctions and various shades of meaning. The importance of the study as an aid in the cultivation of correctness and precision in English composition and in our every-day speech, will hardly be questioned. In compiling the following pages we have in some measure availed ourselves of the labors of Crabb, whose work on "English Synonyms Explained," despite its rather prosy reflections and much that is now obsolete, is a great storehouse of illustration. We are also indebted somewhat to Archbishop Whately, but more particularly to Archdeacon C. J. Smith, M. A., whose "Synonyms Discriminated" we earnestly commend to the attention of students of English and to members of the teaching profession.

Without a knowledge of the uses and force of words one cannot become a good writer. The qualities of a good literary style in writing most men of letters are agreed upon. A high authority in speaking of the art of composition observes: "My only rule is to know what I mean to say, to say it, and have done with it. Clearness and conciseness are within the reach of all of us, though grandeur, beauty, and piquancy are not." The main thing in writing, says Professor Blackie, is to have distinct, clear, and well-marshalled ideas, and then to express them simply and without affectation. Try to see clearly, to speak justly, says another good judge, and you are on the road to a style. "Idiom is the cream of language." Be simple and unpretentious. Use common forms for thoughts that have often been expressed. Avoid foreign phrases and scraps of the dead languages. There is nothing which can be said at all which cannot be said in English. Choose epithets carefully and use them sparingly, and avoid superfluous expressions. The French have a proverb, "what is obscure is bad French," hence the merit of lucidity, which characterizes the work of all French writers. "I would allow," says another writer, "very great latitude in the use of words. In this one's instinct and taste must be one's guide. But above everything," he adds, "strive to form every sentence so as to express your meaning in the simplest way, and in accordance with the easiest, plainest rules of English grammar. I am not afraid of a picturesque style, or what is called fine writing, provided you get both grammar and sense."

In connection with this study, it would seem to be important in the youth of the present time to pay some regard to the subject of Orthoepy, since the mere extension of the student's vocabulary, and an appreciation of the nice distinctions in the use of words, are worth little if there is at the same time grave improprieties in the pronunciation of words and a slovenly use of one's mother-tongue. There is no need, in the spirit of pedantry, to insist upon purisms and such elegancies in familiar speech as shall seem mere affectations; but the difference is vast between dilettantism and the atrocities of colloquial speech that one hears so frequently, with other evidences of faulty or superficial education. To extend one's vocabulary, however, and to make it serviceable for ready and accurate use, in public address or in ordinary home speech, is a duty which should be urged upon all, for the pleasure as well as profit to be derived from the study, while it is in itself one of the first and truest tests of culture. G. M. A.

SELECTED EXAMPLES

Abet, *v.*, to aid, incite, encourage, used chiefly in a bad sense.

"And you that do *abet* him in this kind
Cherish rebellion."—*Shakespeare.*

Synonym: Aid, assist, favor, help, promote, sustain.

Antonym: thwart, baffle, deter.

Abettor, *n.*, one who abets or encourages, generally to do evil.

Syn.: an accessory, an accomplice, a backer-up.

Ant.: baffler, foe, adversary, rival.

Syn. dis.: An *abettor* incites, proposes, en-

courages, but takes no part; an *accessory* aids, conceals, helps forward; an *accomplice* designs or executes. The jurist Blackstone says that an accessory is not the chief actor nor even present.

Ability, *n.*, power to act, mentally or physically.

Syn.: energy, power, force, might, genius, talent, skill.

Ant.: weakness, imbecility, incapacity, maladroitness.

Syn. dis.: This word is sometimes confused with *capacity:* the two are not exactly synonymous. *Capacity* denotes power or capability of receiving; *ability* implies action — the power to do. *Abilities* denotes all our powers, but chiefly our mental endowments. *Capacity* is the power of receiving and retaining knowledge with facility; *ability* is the power of applying knowledge to practical purposes. *Capacity* is shown in quickness of apprehension. *Ability* supposes something done; something by which the mental power is exercised in executing, or performing, what has been received by the capacity.

Abridge, *v.*, to lessen, curtail, prune, shorten; to epitomize.

"Besides, thy staying will *abridge* thy life."—*Shakespeare.*

Syn.: contract, reduce, diminish, condense, compress.

Ant.: expand, enlarge, lengthen.

Abridgment, *n.*, the thing abridged; the act or process of abridging.

Syn.: an epitome, a compend, abstract, summary, synopsis, draft, précis, digest; reduction, contraction, restriction. An *abridgment* contains the more important parts of a larger work. A *compendium* or an *epitome* is a condensed account of a subject. An *abstract* or a *summary* is a brief statement of a thing in its main points. A *synopsis* is a bird's-eye view of a subject or work in its several parts.

Abstemious, *adj.*, temperate, or sparing in the use of food or strong drinks.

Syn.: abstinent, temperate, sparing, frugal.

Ant.: self-indulgent, gluttonous.

Syn. dis.: A person is said to be *abstemious* who is sparing in the indulgence of the appetites or passions. *Abstemiousness* is the quality of being sparing. *Temperance* is the act of using or enjoying with moderation; *abstinence*, the act of refraining altogether.

Accomplish, *v.*, to execute, to fulfil, to complete.

Syn.: achieve, consummate, finish, realize, perform.

Ant.: frustrate, lose, fail.

Syn. dis.: We *accomplish* a task, *achieve* success, *fulfil* an agreement, *execute* a mission, *perform* a duty or an act, *complete* a work or a bargain, *realize* an expectation. We accomplish a plan proposed by one's self; we execute another's plan; effect a purpose; achieve under special circumstances of difficulty; perform a part assigned to us.

Accurate, *adj.*, very exact, free from error or mistakes, in careful conformity to truth.

Syn.: correct, precise, just, strict, careful, right.

Ant.: vague, loose, careless.

We say "*accurate* account, statement or calculation; *exact* date, amount or likeness; *precise* moment in meaning: *precise* in dress or language." *Exact* means conformable to the thing represented; *accurate* (*cura*, care) refers to the pains bestowed; *correct* refers more to the doer; *precise* (*precisus*, cut down) denotes exact limitation as opposed to vague. An exact drawing is one perfectly faithful: a correct drawing, one fulfilling all the rules of the art; an accurate one, that which pains have made exact. (*See* perspicuity.)

Accuse, *v.*, to complain against, to find fault with.

Syn.: charge, impeach, arraign, indict, blame, criminate.

Ant.: defend, vindicate, absolve, acquit.

Syn. dis.: The term *charge* is the most general. It is an informal action, while *accuse* is properly a formal action. *Accuse*, in the proper sense, is applied particularly to crimes, but it is also applied to every species of offense; *charge* may be applied to crimes, but is used more commonly for breaches of moral conduct; we *accuse* a person of murder; we *charge* him with dishonesty. "*Impeach* and *arraign* are both species of *accusing;* the former in application to statesmen and state concerns, the latter in regard to the general conduct or principles."

Address, *n.*, manner of speaking, delivery; tact; the act of making a verbal or written communication, or the communication itself.

Syn.: appeal, invocation, petition; tact, dexterity, adroitness; discourse, speech, harangue, oration.

Syn. dis.: "A *speech* is a form of words bearing on some topic of common interest to speaker and hearer; an *address* is a form of words directed to some person or body of persons; an *oration* is an elaborate speech for a special occasion; a *harangue* is a noisy, vehement appeal to the passions; a *declamation* is the delivery of a memorized speech or exercise, as in schools; the latter also means loud or empty speaking in public."

Addicted, *v.*, habituated to; wholly given over to; over-mastered, generally by some bad habit, or enslaved by some low vice.

"Young men *addicted* to low company seldom ever dedicate themselves to the highest service of the State."

Syn.: accustomed, prone, inclined, habituated.

Ant.: averse from, unaddicted.

Syn. dis.: "To *addict* is to indulge one's self in any particular practice; to *devote* is to direct one's powers and means to any special pursuit; to *apply* is to employ one's time or attention about any object. Men are *addicted* to vices; they *devote* their talents to the acquirement of any art or science; they *apply* their minds to the investigation of a subject."

Adverse, *adj.*, inimical, hostile, antagonistic, opposed to.

"Though time seems so *adverse*, and means unfit."—*Shakespeare.*

Syn.: contrary, opposite, conflicting, unfavorable, unpropitious.

Ant.: favorable, friendly, lucky, fortunate.

Syn. dis.: "*Adverse* is commonly employed of that which tends to thwart our plans or movements by an opposing force or influence, as adverse fate, adverse circumstances, adverse

winds; *contrary*—the far wider term—is employed rather of the course or character of events, as running counter to one's expectations or designs, though we sometimes speak of contrary winds; *opposite* rather belongs to that which is widely unlike." *Inimical* and *hostile* belong strictly to personal character and feeling, the latter being the stronger term of the two.

Allude, *v.*, to make indirect reference to, to hint at.

Syn.: to refer, hint, suggest, intimate, insinuate.

Ant.: specify, demonstrate, declare.

Syn. dis.: "To *allude* is indirect; *refer* is direct and positive." If we quote an author, for instance, not by name, but by description, style, or subject-matter, we *allude* to him; but if we point, specifically and plainly, to something he has said or written, we *refer* to him. The fault of *reference* is not obscurity, but inexactness; the fault of *allusion* is often its vagueness and indefiniteness; we say a wrong or inaccurate *reference*, a vague or obscure *allusion*. *Hint*, in the main, has to do with matters of knowledge; *suggest*, with matters of conduct. We receive a *hint* of danger, a *suggestion* how to avoid it.

Amend, *v.*, to correct a fault or error, to improve, to make or grow better.

Syn.: correct, reform, emend, mend, rectify, improve, better.

Ant.: spoil, corrupt, vitiate, mar.

Syn. dis.: *Amend*, *emend*, and *mend* are really the same word, their common root being *menda*, Lat., for a blemish. In ordinary usage, *amend* means to better morally, while *emend* means to remove faults, chiefly literary blemishes. To *correct* is to bring into conformity with moral or artificial rule; to *reform* is to correct in a more continuous and lasting manner. To *rectify* means to set right or straight what formerly was wrong or false. "We *amend* our moral conduct, *correct* errors, *reform* our way of life, *rectify* mistakes, *emend* the readings of an author, *improve* our mind, *mend* or *better* our condition."

Animate, *v.*, to give life to, inspire, inspirit, invigorate.

Syn.: cheer, enliven, inspire, embolden, exhilarate.

Ant.: dishearten, depress, discourage.

Syn. dis.: *Animate* and *inspire* imply the communication of the vital or mental spark; *enliven*, *cheer*, and *exhilarate* signify action on the mind or body. The lower influence is expressed by the word *animate*, as "the soul *animates* the body;" the higher, more energetic, and finer faculties are said to be imparted by *inspiration*, as, to be *inspired* with a sublime courage or devotion. To *enliven* respects the mind; *cheer* relates to the heart; *exhilarate* regards the spirits, both animal and mental; they all denote an action on the frame by the communication of pleasurable emotions.

Apparent, *adj.*, that may be easily seen, obvious, plain.

Syn.: clear, visible, manifest, evident, plain, seeming.

Ant.: dubious, hidden, inapparent, unobservable, real.

Syn. dis.: *Apparent*, as a scientific term, means seeming, as opposed to real; here we deal with it in the sense of being clear, visible, in opposition to concealed or dubious. In the general sense, the synonyms of *apparent* agree in expressing various degrees in the capability of seeing; *visible* is the only one used purely in a physical sense; *clear*, *plain*, *obvious*, as well as *apparent*, are used physically and morally; *evident* and *manifest* solely in a moral acceptation. *Obvious* is applied to what we cannot help understanding; *evident* denotes what is easily recognizable as a fact or truth; *manifest* (*lit.* "struck by the hand") is that which is palpably plain, and exhibits itself without question.

Assent, *n.*, act of admitting or agreeing to, consent, accord.

Syn.: consent, approbation, concurrence, agreement.

Ant.: dissent, disavowal, repudiation.

Syn. dis.: "*Assent* respects the judgment; *consent* respects the will. We *assent* to what we admit to be true; we *consent* to what we allow to be done. Some men give their hasty *assent* to propositions which they do not fully understand; and their hasty *consent* to measures which are very injudicious. *Approbation* is a species of *assent; concurrence* of *consent*." To *approve* is not merely to *assent* to a thing, but to signify that it has the support of our reason and judgment. *Concurrence* is generally used only of numbers, not of single individuals.

Assent, *v.*, to admit as true, to yield to, to agree to.

Syn.: to accede, acquiesce, concur, comply, accord.

Syn. dis.: "To *assent* is purely mental, and denotes a concurrence with approval as an act of the judgment; to *acquiesce* is to concur with what is said or done by another; to *consent* is to agree *to act* according to the will of another."

Avocation, *n.*, *Lit.*, a calling off, a direction of the attention; a calling away from any business or work in which one is chiefly engaged.

Syn.: calling (by common but incorrect usage), employment, business, occupation.

Syn. dis.: This word is often and wrongly confounded with *vocation*, which means one's steadily-pursued profession, business, or calling in life. One's *avocations* are the things that interrupt or call away from business or pursuit, the objects that occupy one incidentally. "The term *avocation* is properly used of the minor affairs of life, less prominent and engrossing than business, or such calls as are beside a man's duty or occupation in life." One's *vocation* may be to teach; one's *avocations* may be anything in which one finds relief from the drudgery and routine of teaching.

Beg, *v.*, to ask earnestly, to solicit, to supplicate, to desire.

Syn.: beseech, solicit, expect, supplicate, crave, implore, request, entreat, adjure.

Ant.: insist, exact, extort, require, demand.

Syn. dis.: "To *beg* marks the wish; to *desire*, the will and determination. *Beg* is the act of an inferior; *desire* that of a superior. We *beg* a thing as a favor, we *desire* it as a right. To *beg* indicates a state of want; to *beseech*, *entreat*, and *solicit*, a state of urgent necessity; *supplicate* and *implore*, a state of abject distress; *crave*, the lowest state of physical want. One *begs*

with importunity; *beseeches* with earnestness; *entreats* by the force of reasoning and strong representation. One *solicits* by virtue of one's interest; *supplicates* by a humble address; *implores* by every mark of dejection and humiliation. * * *Craving* is the consequence of longing; it marks an earnestness of *supplication*, an abject state of suffering dependence."

Benignity, *n.*, kind-heartedness, loving-kindness, graciousness.

"The king was desirous to establish peace rather by *benignity* than by the shedding of blood."

Syn.: benevolence, humanity, kindness, tenderness.

Ant.: harshness, malignity, churlishness.

Syn. dis.: "*Benevolence* and *benignity* lie in the will; *humanity* lies in the heart; *kindness* and *tenderness* in the affections; *benevolence* indicates a general good-will to all mankind; *benignity*, a particular good-will flowing out of certain relations; *humanity* is a general tone of feeling; *kindness* and *tenderness* are particular modes of feeling. *Benignity* is always associated with power and accompanied with condescension; *benevolence*, in its fullest sense, is the sum of moral excellence."

Bent, *n.*, disposition towards something, tendency, proclivity.

Syn.: bias, inclination, prepossession, proneness, predilection.

Ant.: indisposition, aversion, prejudice.

Syn. dis.: These various terms denote a predisposing and preponderating influence on the mind. "*Bent* is applied to the will, affections, and powers in general; *bias* solely to the judgment; *inclination* and *prepossession* to the state of the feelings. The *bent* includes the general state of the mind, and the object on which it fixes a regard; *bias*, the particular influential power which sways the judging faculty. *Inclination* is a faint kind of *bent; prepossession* is a weak species of *bias*."

Between, *prep.*, in the middle, from one to another.

"How long halt ye *between* two opinions?"—*I. Kings xviii, 21.*

Syn.: betwixt, intermediate, intervening, and (wrongly) among.

Syn. dis.: "In strict accuracy, *between* is used only of two. When there are more than two the proper term to use is *among;* but this distinction is not always, as it should be, observed. *Between* (from twain) is used in reference to two things, parties or persons; *among*, in reference to a greater number, as: There was a perfect understanding *between* the two leaders of the people, though there was great dissension *among* the rioters. *Betwixt* and *intermediate* signify between two objects; *intervening* signifies coming between; the former is applicable to space and time, the latter either to time or circumstances."

Blame, *v.*, to find fault with, to express disapproval of.

Syn.: reprove, reproach, upbraid, censure, condemn.

Ant.: acquit, exculpate, exonerate, praise.

Syn. dis.: "The expression of one's disapprobation of a person, or of that which he has done, is the common idea in the significance of these terms; but to *blame* expresses less than to *reprove*. We simply charge with a fault in *blaming;* but in *reproving* severity is mixed with the charge. *Reproach* expresses more than either; it is to *blame* harshly. To *blame* and *reprove* are the acts of a superior; to *reproach*, *upbraid*, that of an equal; to *censure* and *condemn* leave the relative condition of the agent and the sufferer undefined. *Blame*, *reproach*, *upbraid*, and *condemn* may be applied to ourselves; *reproof* and *censure* are applied to others. We *blame* ourselves for acts of imprudence; our consciences *reproach* us for our weakness, and *upbraid* or *condemn* us for our sins."

Brace, *n.* (etymol.), a pair, referring principally to the two arms [F. *bras;* O. F. the arm, strength]. Syn.: couple, pair.

Syn. dis.: "*Couple* or *pair* are said of persons or things. When used for persons, the word *couple* has relation to the marriage tie; the word *pair* to the association of the moral union. * * When used for things, *couple* is promiscuously employed in familiar discourse for any two things joined together; *brace* is used by sportsmen for birds which are shot and supposed to be coupled. *Brace* signifies things locked together, after the manner of the folded arms, which on that account are confined to the number of two. *Brace* is sometimes employed of men, but then contemptuously." The term *couple* should never be employed for two, brace, or pair unless when referring to persons or things joined or linked together.

Calamity, *n.*, a great misfortune or cause of misery, either public or private, but more frequently the former.

Syn.: disaster, misfortune, mischance, mishap, visitation.

Ant.: blessing, boon, God-send.

Syn. dis.: A *calamity* seldom arises from the direct agency of man; like *visitation*, it is a term sometimes used to denote providential infliction or retribution. In its general sense, it is a great *misfortune* or *disaster;* a *misfortune* is a great *mischance* or *mishap*. "The devastation of a country by hurricanes or earthquakes, or the desolation of its inhabitants by famine or plague, are great *calamities;* the overturning of a carriage, or the fracture of a limb, are *disasters;* losses in trade are *misfortunes;* any minor misadventure is a *mischance* or a *mishap*."

Calculate, *v.*, to arrive at a result by an arithmetical operation of any kind; to compute, to reckon, to estimate.

Syn.: compute, reckon, count, enumerate.

Syn. dis.: "To *calculate* is the generic term; the rest are specific; *computation* and *reckoning* are branches of calculation, or an application of those operations to the objects of which a result is sought. To *calculate* comprehends arithmetical operations in general, or particular applications of the science of numbers, in order to obtain a certain knowledge; to *compute* is to form a numerical estimate, though it is applicable to magnitude. *Count* is etymologically another form of *compute*, but its signification is nearer to that of *reckon:* it is to reckon one by one, to add up the individual items. *Estimate* is to compute more generally, as to estimate the average or probable market value of goods, distance, and the like, in a rough manner. *Enumerate* is to tell the number by expressing the items, and is a process of speech rather than of arithmetic."

THE SCIENCE OF FAMILIAR THINGS:

IV.—COMPOSITION AND RESOLUTION OF VELOCITIES

A MAN rows a boat at the rate of five miles an hour against a river current of three miles an hour. How long will it take him to reach a point on the river bank four miles above his starting point?

He moves up-stream five miles every hour, and, at the same time, he moves three miles in the opposite direction. His movement with respect to the river bank is, therefore, but two miles an hour, up-stream, as we find by deducting from the five miles gained every hour the three miles lost. He will, therefore, reach the point in two hours, as he would do if there were no current in the river and he rowed at the rate of two miles an hour.

The Composition of Velocities

In solving this problem we have performed an operation known in mechanics as the "composition" of movements or of velocities. We have combined two velocities which have different directions and have obtained the "resultant," as it is called; that is to say, the single velocity, which is equivalent to the two existing simultaneously. In the case supposed there might have been a third movement to be taken into account. A strong wind would have moved the boat in one direction or another and would thus have affected its velocity with reference to the river bank. Indeed, the movements of a body are sometimes very complex; it may be moving in several directions at the same time; yet in all such cases the result is that it moves practically in some single, definite direction and with a definite velocity. How to determine this resultant velocity under various circumstances, is the question we are now to consider.

How to Combine Velocities

The simplest case of composition of velocities is that in which there are but two velocities to be combined which have either the same direction, as would be the case were this man to row down-stream instead of up-stream, or in opposite directions, as in the problem just solved. Obviously, if they are in the same direction, to find the resultant we have only to add them together and take their sums. Thus, if this man were to row down-stream at the rate of five miles an hour, while the river flowed three miles an hour, he would, in effect, move at the rate of eight miles an hour with reference to the river bank. It is equally clear that when they are in opposite directions, as when this man rowed up-stream, we must take their difference for the resultant.

But suppose that the two velocities to be combined are neither in the same nor in opposite directions, but make an angle with each other? We will examine a case of this kind. A river flows from west to east at the rate of three and a half miles an hour, or 300 feet a minute. A man starts to row a boat directly across it, from its southern to its northern bank, rowing at the rate of 600 feet a minute. The problem is to find in what direction and with what velocity he moves in consequence of having these two independent movements; or we will make the problem a little more definite and will ask in what direction and how far from his starting point he will be at the end of five minutes?

We can solve this problem the more readily with the help of a diagram. Draw upon a sheet of paper, in a horizontal direction, a line of any convenient length, say three inches, to represent the direction and velocity of the current. Mark the left hand end of this line A, the right hand B. Consider A as representing the point at which the man starts; B indicates the point 300 feet east of A, to which he would be carried in one minute, if he allowed his boat merely to drift with the current. Now, according to the supposition he is not drifting, but is rowing northward. Erect at A a perpendicular line six inches long, to represent the course of the boat and its velocity, 600 feet a minute. Mark the upper end of this line C. C indicates the point at which the man would be after rowing one minute if there were no current in the river; but actually, while he has been rowing this distance of 600 feet the whole surface of the river has

moved eastward 300 feet, so that he will now be, not at C, but at a point 300 feet east of C. Indicate this fact by drawing from C, to the right, a horizontal line three inches in length, and mark the end of this line D. D indicates the point at which the man is at the expiration of one minute, as a result of the two simultaneous movements. The line C D is equal to and parallel with the line A B. A line drawn from B to D will be equal to and parallel with A C. Our diagram is, therefore, a parallelogram. Draw a line diagonally from A, the point at which the man started, to D, the point at which he now is. This line, clearly, represents the direction in which he would have to row and the distance he must traverse to reach the point D from A, moving in a straight line, if there were no current in the river.

Furthermore — and here is the important point — it represents the line along which he actually has moved, since for every foot, every inch, which he moved northward in rowing he was carried eastward by the steady current a distance one half as great, so that at every instant during the minute he was at some point on this line. He arrived at the point D in one minute after leaving A. The line AD therefore represents the resultant of the two velocities represented by the lines AB and AC, respectively. As long as he continues to row under these circumstances he will move in the direction of this line, and we can now easily find where he will be at the end of five minutes. Either we can prolong this line on our diagram to five times its length and measure the distance thus found, remembering that the diagram is drawn to a scale of one hundred feet to the inch, or we can measure the line AD and thus get the resultant velocity in feet, which we can then multiply by five. Or, if we wish to be more exact, we can calculate the length of the line AD geometrically. It will be found that the resultant velocity is, in this case, 670 feet a minute, nearly.

Parallelogram of Velocities In this diagram we have what is called a "parallelogram of velocities." In the problem just considered the two velocities were at right angles with each other; but had they formed with each other any other angle our diagram, constructed in the same way, would still have been a parallelogram, and the diagonal drawn from A to D would still have represented the resultant of the two velocities. Thus, suppose that the boat had been rowed with the same velocity in a northeast direction. In this case we should have drawn the line AC of the same length as before, but sloping to the right at an angle of 45 degrees to the horizontal, to indicate a northeast direction. CD would still have been drawn horizontal, and therefore parallel with AB, and BD would still be parallel with AC. The only effect of the change would have been to make the diagonal longer than before. That is, the resultant velocity would have proved to be greater than before. Had the boat been rowed toward the northwest, a similar construction would have brought out a resultant velocity smaller than in the first case.

Rule From the study of this problem we get the following simple rule for compounding two velocities and obtaining their resultant:—

Represent the two velocities by two straight lines of lengths proportional to them, each line being drawn from a point (A), at which the motion is conceived to begin, in the direction of the velocity, which it represents. Construct a parallelogram by combining with these lines two others of the same lengths. The diagonal drawn from the vertex of the angle at A to that of the angle opposite will represent both the direction and the velocity of the resultant motion.

Composition of Several Velocities When more than two velocities are to be compounded, begin by representing them by lines of lengths proportional to them, *all drawn from the same point (A)*, each in the direction of the velocity which it represents. Compound any two of them by the method just given. Then compound the resultant obtained with a third, and if there is still another, compound the second resultant with this, and so on, until all of the lines have been used — have been made the sides of parallelograms. The last resultant is the resultant of all of the velocities taken together. Thus: Suppose that in our problem of the man and boat we had had to take account of a southeast wind blowing with a force sufficiently great to move the boat steadily toward the northwest at the rate of one hundred feet a minute. We

should represent this velocity by a line one inch in length drawn from A at an angle of forty-five degrees to the horizontal, sloping upward to the left, to represent a northwest direction. Then, having obtained the resultant AD as before, we should construct a second parallelogram, taking AD for one side and the inch line just drawn for another side. The diagonal drawn from A to the angle opposite it in this second parallelogram would represent the resultant of the three velocities. The extremity of this new diagonal and not the point marked D, would now indicate the position of the man at the end of the minute, as a result of the rowing, the current and the wind combined.

Polygon of Velocities

Our problem in this case was to find the position of the man at the end of one minute as a result of his having motion in three directions at the same time. A moment's thought will show that he would reach the same point if he moved to the same distances in the same directions at different times. Thus, let him move east 300 feet, then north 600 feet, then northwest 100 feet, and he will arrive at precisely the same point as though he had moved to these distances in these directions at one and the same time. This consideration gives us a second method of solving a problem of this kind. Beginning at a point A draw a line AB in the direction of one of the velocities and of a length which will represent that velocity on some convenient scale. From B draw a second line, BC, of a proper length and in the proper direction to represent a second velocity. In the same way represent a third by a line CD, and so on, until all the velocities have thus been consecutively represented by lines proportional to them in length and drawn in the proper directions, the lines joining one another. The end of the last line thus laid down will indicate the point to which the moving body would be carried in the given time if the movements were simultaneous. A line drawn from this point to the starting point, A, will, therefore, represent the resultant of the velocities. The irregular figure thus drawn is called a "polygon of velocities." The side last drawn, to complete the polygon, represents the resultant.

PROBLEMS

THE following problems may be solved by drawing diagrams to scale and measuring as accurately as possible the distances to be found. The answers to be given next month, will be those obtained by calculation. See how close you can come to these answers.

1. Find the resultant of two velocities, one of 50, the other of 80 feet a minute, *a*, when they are in the same direction, *b*, when they are in contrary directions, *c*, when they are at right angles with each other, *d*, when they make with each other an angle of 45 degrees, or one half of a right angle.

2. Find the resultant of the four following velocities: North, 40 feet a minute; northwest, 50 feet a minute, southwest, 20 feet a minute; south, 80 feet a minute. Solve by both methods.

3. Decompose a velocity of 100 feet a second into two component velocities of which one is twice the other. What are the two velocities?

4. A ship is sailing in a northeast direction at the rate of fourteen miles an hour. How fast is this ship moving due east; how fast due north?

5. A railway train is running past a station at the rate of 30 miles an hour — 45 feet a second. A mail bag is thrown from it with the velocity of 15 feet a second, in a direction at right angles with the track. In what direction and with what velocity will the bag be moving when it strikes the platform of the station — in what direction will it slide on the platform?

CURVILINEAR MOTION

IN all of the cases thus far considered the movements have been in straight lines; the velocities have been uniform. The composition of two velocities, of which one is uniform, while the other is accelerated, always results in a curvilinear motion. A familiar case is that of projectiles. A stone thrown from the hand, a ball shot from a gun, a jet of water issuing horizontally from a spigot, always describes a curved path. The

study of a case of this sort with the aid of pencil and paper will show us both the reason of the curving path and the character of the curve described.

Construction On the left-hand side of a sheet of paper draw a perpendicular line, extending from the bottom nearly to the top of the paper. Mark the upper end of this line A. From A draw a horizontal line to the right-hand edge of the paper, and mark the end of the line B. Let A represent a point in some elevated place from which a ball is shot, say by a spring, in the horizontal direction AB, with a velocity of 80 feet a second. We are to find the curve which will be described by this ball in falling.

Divide the line AB into a number of equal parts of a convenient length, as one inch, to represent distances of 80 feet, and, beginning on the left, mark the division points a, b, c, etc. If the ball had only the one movement given to it by the spring, in one second it would reach the point a, in two seconds the point b, in three seconds the point c, and so on, moving with a uniform velocity along this horizontal line. But it is not permitted to move thus.

The instant it is shot from its support into the air, gravity begins to act upon it and to pull it downward, for it makes no difference with gravity whether a body which it finds without support is at rest or in motion. It pulls at the body with the same force in either case. We have already studied the law of falling bodies. We know that a body falls from a state of rest sixteen feet in one second, four times as far in two seconds, nine times as far in three seconds, and so on, the distance fallen being proportional to the square of the time. Our flying ball must obey this law. Accordingly, at the end of the first second it will be not at a, but at a point sixteen feet below a. Sixteen feet, on our scale of eighty feet to the inch, is one-fifth of an inch. Drop a perpendicular line one-fifth of an inch long from a. The lower end of this short line will indicate the position of the ball at the end of the first second. For a like reason, at the end of the next second the ball will not be at b, but will be at a point sixty-four feet — four times sixteen — below b. To indicate its position on the diagram, drop a perpendicular line from b four-fifths of an inch in length. In the same way indicate its position at the end of the third, fourth and fifth seconds by dropping perpendicular lines proportional in length to the distance it has fallen in the time elapsed — nine-fifths of an inch long at c, sixteen-fifths at d, twenty-five-fifths at e, and so on, as far as you may choose to carry the construction. The lower ends of these lines indicate the positions of the ball at the close of the successive seconds. Now, beginning at A, draw a curve through the ends of these perpendicular lines, as regular as you can make it, and you will have a graphic representation of the path described by the ball in falling. A different velocity given to the ball would, obviously, have changed somewhat the appearance of the curve, a greater velocity rendering it less sharp. But the character of the curve would still have been the same. This curve is that known in geometry as the parabola.

Ballistic Curve In studying the movement of this ball, we have neglected to consider the resistance of the air, and we have, therefore, found only the theoretical path of a projectile — the path which it would take if there were no forces at work upon it except the projecting force and that of gravity. Actually, on account of the resistance of the air, which retards, somewhat irregularly, both the forward and the downward movement, a projectile does not describe exactly a parabola, but it moves along a curve which is known in the science of gunnery as the "ballistic" curve.

PROBLEMS

1. A ball struck with a bat rises at an angle of 45 degrees with the horizontal, with a velocity of 80 feet a second. Construct the path of this ball,—drawing the line AB, not horizontally, as in the problem above studied, but sloping upward at the given angle,—and determine (a) to what height the ball will ascend, (b) at what distance from the batter it will strike the ground, the field being supposed to be perfectly level.

2. It is desired to shoot a ball to the greatest distance possible. At what angle must it be shot into the air? To solve, suppose a particular case, as that the projectile has a velocity of 64 feet a second, and construct on a diagram its path, trying different angles. The work can be done with one diagram, by varying the direction of the line AB. You will thus easily discover, after making three or four trials, the angle at which it must mount in order to go the farthest. The exercise will give you a lively idea of the flight of projectiles.

SOLVING PROBLEMS BY MEANS OF DIAGRAMS

MANY mechanical and geometrical problems which require for their exact solution a knowledge of mathematics greater than the reader is supposed to have, can be solved by means of diagrams with a degree of accuracy sufficient for all ordinary, practical purposes. Below are given a few hints and directions for the employment of this method.

Use of a Scale The diagrams must be drawn to scale. By this is meant that all the lines which represent distances must represent them accurately in miniature, some small unit of measurement being taken to represent larger actual units. Thus, an eighth of an inch may be taken to stand for a foot, a rod, or a mile of actual distance; or if the size of the paper admits, a quarter or a half of an inch may be taken as the unit. Whatever unit is chosen must be adhered to throughout. All of the distances will then have their proper proportionate lengths.

Parallel Lines Two straight lines which lie in the same direction and which, like the two sets of rails of a railway track, are everywhere at the same distance apart, so that they would not meet however far in either direction they might both be prolonged, are said to be parallel with each other. To draw a line parallel with a given line, AB, and at a certain distance from it, open a pair of dividers (compasses) to the required distance. Place one foot of the dividers on one end of the given line and describe a circle. At the other end of the line describe a second circle of the same size in the same way. A line so drawn as just to touch both circles will be the line required.

Angles An angle is the amount of inclination which one straight line has to another. Cut two straight strips of stiff paper, one half of an inch wide and six inches long. Lay them upon a table, one above the other, in a direction parallel with the side of the table which is toward you. Pivot them together at their left hand ends by sticking a pin through them into the table. As they lie thus they may represent two straight lines which coincide — which form one and the same line. Now swing the upper strip to a short distance in a direction from you, while the lower remains undisturbed. The two strips are now inclined to each other, like the two blades of an opened pair of scissors. They form an angle with each other. The farther you swing the strip, the larger the angle will become.

You may, if you choose, swing it entirely around the pin on which it is pivoted, causing it to move, as it were, like a spoke of a revolving wheel. The end of the strip of paper thus swung will describe a circle on the table, and the size of the angle, made when the strip is in any particular position, can be given by stating through what part of the whole circumference the strip has been swung. Angles are, in fact, measured in this way, that is, on the circumference of a circle.

A circle is conceived to be divided into 360 equal parts, called degrees; each degree into 60 minutes; each minute into 60 seconds. Thus, when you have swung this strip of paper one-twelfth of the way around, the two strips will form with each other an angle of 30 degrees; at one-fourth of the way around, the angle will be 90 degrees, or a right angle; at one-third of the way around, it becomes 120 degrees, and at one-half of the way around, 180 degrees. When in this last position the two strips of paper again lie on the same straight line. Usually angles are not reckoned larger than 180 degrees.

This subject will be continued in subsequent numbers, as occasion arises.

QUESTION DEPARTMENT
OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

HE answers to SELF CULTURE questions for August will be found in various volumes of the new Encyclopædia Britannica. The volume and page are indicated after each question.

Aug. 1. What was the career of the adventurer, Neuhof, who became the nominal king of Corsica in 1736? Vol. XVII, p. 362

Aug. 2. What was the significance of the victory at Baylen, which Spanish braggadocio is accustomed to parade as a prelude to Napoleon's defeat at Leipsic?
Vol. XXII, p. 344; Vol. XVII, p. 213

Aug. 3. Was it as an entertaining essayist or as a discriminating critic that William Hazlitt became best known? Vol. XI, p. 549

Aug. 4. When and by whom was the order of the "Legion of Honor" instituted, and what are the conditions of admission?
Vol. XIV, p. 417

Aug. 5. How does the carrying power of the loadstone compare with that of artificial magnets?
Vol. XV, p. 274

Aug. 6. What campaigns made Alexander Farnese as famous in war as his countryman and contemporary, Cervantes, was in literature?
Vol. IX, p. 37

Aug. 7. What accounts for the singular veneration which in all ages has been professed for relics? Vol. XX, p. 355

Aug. 8. Who was the originator of phrenology, and what were the claims made for it?
Vol. XVIII, p. 842

Aug. 9. What caused the Italian philosopher, Bruno, to be condemned to the stake?
Vol. IV, p. 400

Aug. 10. What discoveries in anatomical science must be credited to the ancients?
Vol. I, p. 799

Aug. 11. Which was the most famous of the *Concordats*, or agreements between the Pope and temporal sovereigns? Vol. VI, p. 241

Aug. 12. What was the fate of Barneveldt whom Motley styled "the prime minister of Protestantism?" Vol. III, p. 379

Aug. 13. When were postage stamps first introduced and what difficulties attended their use?
Vol. XIX, p. 585

Aug. 14. In how many parts of the world can cotton be grown? Vol. VI, p. 482

Aug. 15. Who were the founders of and chief workers in the first temperance societies?
Vol. XXIII, p. 158

Aug. 16. What estimate must be placed on the educational experiment which John Stuart Mill underwent at the hands of his father?
Vol. XVI, p. 307

Aug. 17. What fishes have well defined poison-organs as a means of defense? Vol. XII, p. 666

Aug. 18. What Latin hymn furnished Guido with the names of the first six notes of the musical scale? Vol. XI, p. 257

Aug. 19. How much was done by the Herschels (brother, sister and son) to advance the science which so long engaged their special attention? Vol. XI, pp. 765–768

Aug. 20. How is carbolic acid prepared and what are its principal uses? Vol. V, p. 85

Aug. 21. What was the real character of the Ossianic poems which Macpherson claimed to have translated? Vol. XV, p. 166

Aug. 22. How does the navigator use the "log" in order to determine the speed of his vessel? Vol. XIV, p. 769

Aug. 23. What interest attaches to the personality of the fair Inez de Castro, from whose brother the regnant house of Portugal is descended? Vol. V, p. 202

Aug. 24. For what was Leverrier distinguished besides the wonderful feat of calculating the position of an undiscovered planet?
Vol. XIV, p. 486

Aug. 25. What was Lord Palmerston's forecast of European politics in a famous letter indited a month before his death?
Vol. XVIII, p. 197

Aug. 26. What is known respecting the origin of the Druses, whose religious belief Milman declared to be "one of the most extraordinary aberrations that ever extensively affected the mind of man"? Vol. VII, p. 483

Aug. 27. Which is the most creditable of those productions which engaged Diderot during a long literary career? Vol. VII, p. 193

Aug. 28. What was De Soto's probable line of march during the four years' search for wealth, commencing at Tampa, Florida, in May, 1539? Vol. VII, p. 131

Aug. 29. What were the physical peculiarities of the *Megatherium*, an extinct land animal exceeded in size only by the elephant?
Vol. XV, p. 829

Aug. 30. What contrasts are presented by the prose and poetry of Heine, a Jew by blood, a German in speech, a Frenchman in style, a cosmopolite in feeling? Vol. XI, p. 625

Aug. 31. What has been accomplished in celestial photometry, or measurement of the light emitted by the heavenly bodies?
Vol. XVIII, p. 840

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

VOL. V SEPTEMBER, 1897 No. 6

CAN CO-OPERATION SOLVE THE LABOR DIFFICULTY?

HOW to reconcile the apparent conflict between capital and labor is the question of the hour. It is a question which may well challenge the maturest thought of the practical business man, on the one hand, and of the earnest student of political economy and sociology, on the other. If it be possible to conceive any scheme whereby the condition of the toiling masses, whose welfare is that of the greatest number, may be ameliorated, no suggestion looking to that end can be regarded as impertinent, — no careful and well-considered contribution to the literature of the subject may be deemed idle or irrelevant.

It is clear, however, that, for the time being, all suggestion must be merely tentative, all effort experimental. Whether there is not, after all, in the very nature of the case something practically insoluble is not yet clearly determined. Various plans have been suggested from time to time. That which has been most discussed and which at first blush would appear to be the most feasible is based on the idea of co-operation. To combine the various industries of those who labor and create capital is deemed a solution of the vexatious problem. It may not be out of place, therefore, to devote a little space to the consideration, in the light of practical, everyday experience, of some of the arguments which have been presented by its advocates. I do not recollect to have seen a clearer or more forcible statement of those arguments than is contained in the published interview with the author of a measure submitted to the Congress of the United States, two or three years since, by Senator Stanford. That the scheme of co-operation, as there presented, could it be made to work, would be a satisfactory answer to the question which antagonizes labor and capital must be conceded. Nor can it be doubted that the results would be as beneficent to the laboring masses, as there depicted. Unquestionably if labor can, by such combination, retain in its own hands the profit which now has to be paid to the capitalist, "it would add new energy to civilized life, because it would increase the prosperity of laboring men, and enlarge in every respect the scope of their lives." No one will dispute the fact that "the condition of labor rises with the advancement of civilization, because with the multiplicity of wants the demand for labor increases, and wants advance in proportion as they may be supplied." Assuming all this to be true, the question remains is such a state of things practicable?

The central idea which the scheme embodies is that by means of co-operation labor can become its own employer, and thus reap the profits which the individual capitalist at present secures. The suggestion is made that by combination of the individual savings of the co-operators into an aggregated concern, the principle of employment is not changed, and the only difference in the result is that the laborers, instead of being employed by and working for one man or concern, are employed by and are working for themselves. In its practical

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outcome it is assumed that the co-operative plan will be in no way different from the present method, which involves an employer distinct from the employed, save that the profits will go to the aggregate concern, and so to the laborers themselves, instead of to the individual capitalist. It is asserted that "aggregated into co-operative relation, intelligent, educated labor possesses the capacity for the accomplishment of any undertaking or enterprise, and need not wait for an individual, called an employer, to associate its effort and direct and control the industry out of which it earns its wages and pays premium to capital."

It is doubtless true that the majority of mankind are employed by the few, and the consequence is that the minority reap the rewards of labor. The question is then asked why, in the case stated (that of a hundred laborers, who each yield a dollar per day of profit to the employer), should not these hundred men dispense with the employer altogether, and, by agreeing to work in combination, to the same common purpose, put this one hundred dollars per day into their own pockets? The case as thus stated looks plausible enough, and if the various postulates upon which the conclusions are based could be verified, the Utopia of the working men and women of this world would be in the near realization. Without assuming any extraordinary shrewdness or far-sightedness, I would modestly suggest that in this, as in all other presentations, of the notion of co-operation, too many things are taken for granted. Let me notice some of them.

The ranks of the employed are everywhere divided into two classes. One of these, as we all know from experience, will never be other than men-servers, hewers of wood and drawers of water to others. They are strangers to economy or thrift, laboring only to the extent which their present needs demand. If they could get enough to eat and drink and sufficient apparel and shelter for their bodies, they would never do any work. They are constitutionally tired and shiftless, and do what they are obliged to do and no more. It would be idle to include these in any scheme of co-operation, because the betterment of their condition, social or intellectual, is no systematic or intelligent part of their efforts. Nor would any enterprising, conscientious worker be willing to associate himself with such. It would matter little what opportunities were afforded this class, whereby they might improve their condition; their condition, in truth, never would be improved. Indeed if they were to be endowed at the outset of their lives with the means to such an accomplishment, and all effort rendered unnecessary, this class, from the very nature of their constitution, would soon be re-committed to the condition of servitude to others shrewder and thriftier than themselves. They cannot, therefore, be taken into the account. Their elevation and improvement can never be accomplished; or if accomplished at all, by other than strained and artificial means. In estimating the possible advantages to ensue from a system of co-operative employment, the improvement in condition, social, moral or material, of those who participate, there must be postulated the *desire*, at least, for such improvement.

Let us take, then, the other class, those who are ambitious and eager to raise themselves above the level of common labor, but who find their endeavors thwarted at every turn, who are obliged to toil on, year after year, for such wages as the employer finds himself compelled to give, as the law of supply and demand dictates. It is to this class that our sympathies should be extended. It is for the sake of these that any considerations arising out of the relations of capital and labor are worth the effort of presenting them. Assume, that by aggregating their accumulations, or by means of credit obtained, if that be possible without security, they enter upon the business of manufacturing or upon any of the enterprises of trade or commerce, let me point out some of the practical difficulties in the way of their realizing the advantages which are prophesied as likely to accrue. It does not seem possible that any combination of laborers can so manage and conduct a co-operative business as to avoid the diversion from their common treasury of the profit now paid to the employer.

The argument is used, that in one sense under the present system the employed laborers really hire the employer, so-called, and pay him the profit which he realizes. In other words — "It," labor, "is paying a premium to enter-

prise to regulate and direct its employment." Is there not just here a very pregnant suggestion? Can it be doubted that there is a necessity for some originating and directing faculty in every large or small establishment? Do business enterprises run themselves by mere manual effort? Suppose that we could set in operation to-morrow an industry created by a hundred co-operatives, each man and woman in his and her respective place, at the loom, in the office, at the engine or in the mart. They are all co-operating, each aiding in the department for which their training and skill have fitted them to produce a given article and get it into the market. Is that all that is required? Take an army of a hundred thousand men, thoroughly equipped, each man at his post of duty, the soldier and the officer, with quartermaster, commissary and engineering departments in complete working order, waiting for the bugle blast which is to summon them to battle, and imagine the bugle blast sounded. There is no head, no general to command or direct operations. How long will they march? What will such an army accomplish? It would be the body, limbs, organs and physical structure, with no spirit to animate or guide, and would be quickly annihilated.

It will not do to say that in the case of a co-operative manufacturing establishment or commercial enterprise, there is not the need of an intelligence to lay out the work and plan the operations. Without an active, alert brain, to watch the markets, to study the commercial situation, forecast the future, and be constantly alive so as to take advantage of opportunities for buying and selling, to avoid disaster, such a mere physical aggregation, if it were possible to work at all, would be at the mercy of the rival enterprises, controlled, commanded and directed by the keen, shrewd executive and administrative proprietorship of the man or men who could conduct their operations with the business experience, knowledge of men and sound judgment which are required in this age of rivalry and competition. All this is conceded in the remarks of the author of the bill referred to, that "the employers are the greatest benefactors of mankind. They promote industry, foster a spirit of enterprise, conceive all the great plans to which the possibilities of civilization invite them." Where is all this to be found, I would ask, in a mere aggregation of laborers, however skilled in their respective arts, or however diligent in their attention to duty, where each man simply stands at his post and does his allotted task?

But we will suppose the suggestion to be made, that there could be a managing board, whose duty it would be to fulfil all the requirements, demanding skill, judgment, experience and tact, and to perform all the offices of superintendence. How is such a board to be constituted? Whether composed of one man or several men, it must be the choice of the members of the society. Is it a lesson taught by experience that the selection by the popular voice in any enterprise or combination will be of those best fitted (assuming that there will be any of the co-operators at all qualified) to control and plan wisely and well? Will there not be factions and conflicts, jealousies and differences as to policy and methods? Will not the managing offices be sought after, bargained and struggled for, as political office that carries honors or emoluments? Will not those who have to do the drudgery be constantly striving to secure the positions which will give them manifest advantages over their brethren? Or are men and women to strip themselves of all the motives and jealousies and ambitions that ordinarily characterize them, when they become co-operatives? Will the man best adapted prudently and successfully to conduct the affairs of such an establishment be selected by common consent?

Suppose that in such an establishment of aggregated labor there are those fitted in all respects to compete in all matters of management with those whom they must constantly encounter in the world of trade, it would be like picking up as in its natural element a diamond in a stone quarry. "The thought, attention, intelligence and skill," to quote again, "necessary to originate profitable labor is, in fact, a separate department of human activity." Precisely so; and here is observable the fallacy of the argument which would dispense with an employer. It rests upon the hypothesis that when a vast manufacturing or other establishment is once set in motion it has only to keep moving like an automaton.

But let it be assumed that in all such aggregations of labor there will be found men of the requisite mental calibre and experience prosperously to manage its affairs — and this is a pretty generous concession, for in this land men do not go begging long for recognition when possessed of such practical qualifications — is it likely that they are going to undertake the discharge of such duties for the same compensation paid them at the spinning-jack, or behind the counter? In short, must not labor, whether aggregated or not, pay a premium for its direction and management? I have barely glanced at this suggestion. It might easily be amplified.

But again to assume what is thus taken for granted by the advocates of co-operation, that the laboring class can perform for themselves the functions of an employer, that they possess in themselves the intelligence to organize into co-operative relations, does it follow that they will "enjoy the entire benefit of their own labor?" Is there any way whereby "intelligent labor can avoid paying a premium to those who originate its employment and direct its activities?" Is it possible for labor, however intelligent, successfully to conduct its enterprises and compete with rival concerns, without paying a premium to somebody, and will it make any practical difference to the men who do the work, for their usual wages, in their several places, whether this premium is paid to an individual or committee of their own selection? After all is not every employer so selected by the men whom he employs?

Still another difficulty presents itself — on close scrutiny. In a large manufacturing establishment, we will say, there must be a great diversity of labor and equal diversity of skill and proficiency, not to speak of conscientious disposition to do faithful work. These necessitate diversity of wages. Suppose it to be possible to conduct a co-operative industry, in which each operative should receive a sum for his work proportioned to the skill and proficiency he brings to the task set him, who is going to determine what each laborer shall receive? How is the scale of wages to be adjusted?

Go a step farther and suppose the enterprise to be satisfactorily set in operation and a scale of wages justly arranged at the outset, how is the condition of this state of things to be insured? What if dissatisfaction should arise among the operatives, in respect to the matter of wages? One man's labor is worth more or less than another's, according as it involves greater or less thoroughness or skill in its performance. Under the present system, the employer pays for labor what he thinks it worth. But what if under the co-operative system the workmen should take it into their heads that they were not getting their just proportion of wages? Is it in the nature of things that A should be content to work alongside of B for less wages, when they are co-partners equal in interest? Yet suppose that the management has seen fit to give B a larger wage, for the reason that he does more or better work. Will there be any magic in the term "co-operation" which shall exorcise the spirit of discontent and jealousy, or allay the disposition to agitate for an equality of wages? What is there in the constitution of such an aggregation of individuals that shall relieve it from the ordinary consequences of discontent in the class of the employed?

Let us suppose the case of a knit-goods manufactory. The spinners take a notion that they are not getting enough pay for their work, and they ask for more. Who is to settle the matter? The knitters and the winders, the carders and the finishers, are all interested that the wages shall not be increased for any other class of workers, because their own profits will be correspondingly diminished. Because a set of men are working for a concern in which all are interested as co-owners, does it follow that they will remain content to take the wages given them? If you start out with the plan of leaving wages to be paid as, at present, they are earned and distributed, and give profits to each equally, the same objection will be met. It would not do to give to one man or class of men employed more than another, where they are equally interested, and yet such an equal division would give to the industrious and skilled workman no more or larger share in the resultant profit than that given to the careless or less faithful worker. Senator Stanford argued that the jealousy and watchfulness of each co-worker would

assure better and higher excellence. On the other hand, this very supervision, criticism and jealousy, the one of the other, would inevitably create dissensions and differences which would find expression in dissatisfaction with the amount received in wages or profits by each. It is not to be expected that in a large co-operative establishment there would be that oneness of purpose or that harmony of operation that may be found where the partners are but two or three in number.

But now let it be supposed that such an establishment can be made feasible, wherein, first, sufficient capital is combined to give all the contributors employment; that the ordinary traits of human nature have been eliminated, so far as that a hundred men and women will work faithfully and harmoniously side by side, at rates of wages adjusted to the satisfaction of all, and that this adjustment will be permanent; that the aggregation of individuals thus combined has within itself the ability and experience essential to the general management of its operations, and that there has been a consensus of judgment, harmoniously expressed, as to the particular person or persons best adapted and qualified for such management; suppose, also, that the persons thus selected are content to work for the same wages that they would receive as mere operatives, bookkeepers, or salesmen, let us see what practical results, in the way of profits, might be expected to ensue to the individual co-operator.

I will take for the purposes of illustration, the business of manufacturing knitted goods. Let us suppose that there are a hundred persons ready to co-operate, in proper proportions, as carders, spinners, knitters, etc. To purchase the plant of buildings and machinery necessary to furnish employment for these hundred people will require a capital of fifty thousand dollars. That is a fair estimate in this particular line of business, and as to which alone I am qualified to speak. This will make the contribution of each stockholder the sum of five hundred dollars, on a cash basis. It is to be assumed that the hundred co-owners will realize the profit which is to result from a successful prosecution of the business. As things go, ten per cent. upon the investment, over and above the legal interest, would be regarded as a fair profit. This would make five thousand dollars per year. Now take this aggregate profit and divide it among the one hundred stockholders, and the result will be that each of the fortunate individuals receives the munificent sum of fifty dollars per annum, or twenty dollars more than if his money had been put out at the legal rate of interest! It would seem as if there could be nothing very alluring in this after all. In addition to this fifty dollars per annum as profit (and of course it is upon the hypothesis that he had five hundred dollars to start with), the only other comfort he could take would be in the fact that he had ninety bosses instead of one. Would any man with five hundred dollars *in esse*, with the opportunities which even this small sum has for multiplying itself, care to venture it all upon such hazard in order to obtain so meagre a return?

It would seem, therefore, that even were it possible to conduct an establishment employing a hundred operatives in such a manner that the profits would not be less than accrue to the individual employer of a similar number of persons, and that these profits should be proportionately distributed among them, the practical advantage to the employé of such a system would be so insignificant as scarcely to merit consideration. And when it is understood that even this result can be attained only by the harmonious working together of a hundred men and women of various dispositions and interests, a contented and faithful performance by each of the work given him to do, an agreement as to the general management and the wise and prudent selection of experienced and far-seeing managers, together with a disposition on the part of the latter to exact only ordinary wages, any practical result so far as the individual is concerned is reduced to almost zero.

It may be said that the only true test of the practicability of this theory of co-operation must be found in actual experiment, that no harm can come from advocating such experiments, and that therefore objections of the foregoing nature are "irrelevant and impertinent," as the lawyers say. If indeed some philanthropic capitalist, who has faith in this panacea for all the troubles which fall to the lot of the worker with but little capital, would inaugurate a number of estab-

lishments representing various lines of manufacture and trade, to be conducted on this theory, divide the capital invested into shares and loan these shares to the operatives, to be paid for out of the earnings, the outcome, if unsuccessful, might be of serious consequence to no person save himself. But what if deluded by fascinating promises of large profits, together with other marked advantages of co-ownership, the laboring population should be induced to invest its little savings in this way, only to find in the end that they had staked all for no appreciable result, at the best, and possibly have lost all?

If it be reasonably clear that there are inherent in the nature of the scheme vices, which cannot be overcome, will not the laboring man who has so much capital gathered, or a credit to that extent, be wiser to continue to increase this store by the same methods and economy which have enabled him to accumulate in the past, until by wise husbandry and prudent investment he shall have succeeded, as have others before succeeded, by like means, in reaching the position of individual employer? For this fact may not be repeated too often that the majority will ever be the employed and the minority the masters, simply because the latter as a class are thrifty, industrious, and far-sighted enough to keep increasing their store of capital, while the others, lacking these qualities, with an undoubted equal right to labor and accumulate, will never be able to rise to the dignity of capitalists.

ED. J. MAXWELL.

THE DAY OF NEW IDEAS IN THE MOTHERLAND:

A RETROSPECT OF THE VICTORIAN ERA*

IT is a doubtful business to ascribe new ideas to a whole people, for change of ideas is more gradual than change of manners. We may go on for a long time acting under one influence and thinking that we believe in another. But from what has already been said, we may assume a change in the governing beliefs and sentiments of the English nation, greater than any change since the time of Queen Elizabeth, when the old faith gave way to the new; and with the new faith came new courage, new arts, new enterprise, a new literature.

As to religion in Britain, that has indeed changed. The Calvinist, the old Evangelical, lingers yet here and there; but he is comparatively rare; even in the narrower sects there has been a broadening influence at work. In the Anglican faith — the Church of England — which is probably destined to absorb all other forms, we have agreed tacitly to talk no more about the salvation of our souls; neither to talk about it, nor to think about it; to believe ourselves to be one flock in one fold, with one shepherd. Whether this change conduces to the higher spiritual life, I cannot venture to affirm or to deny; I am no theologian.

That the world has become, through this change, through the cessation of the awful question which formerly poisoned life, far, very far, happier than it was, I do declare, without hesitation and from my own personal knowledge and experience. There was no very high spiritual life, formerly, so far as I remember, among those who sought the hardest to limit the mercy of heaven; they led the common life of the lower slopes, with trade in their minds and trade on their souls. There is no very high spiritual life under the changed conditions; still the common folk live the common life; here and there among the clergy is found a Dean Stanley; here and there among the crowd one lights upon a saint. Always there is the common life for the multitude; always there is the saintly life for the chosen few; — whether the leader is St. Francis or Calvin; whether the head of the church be the Pope, or the archbishop of Canterbury, or John Wesley. Let us teach men and women to live well, with full consideration for each other — which is the most comprehensive virtue; the life which thinks of others is the happiest.

* Concluded from the July No. of SELF CULTURE, page 300. See "The Queen's Reign," by Sir Walter Besant, 4to. Illustrated. THE WERNER COMPANY, New York, Chicago, London, Paris, Berlin, and Akron, O., 1897.

Another ingredient in happiness is physical comfort. We are all much better fed than we were sixty years ago — better housed, better clad: all along the line the standard of comfort has been advanced. The huge barracks in which the working-classes of the great cities now live are not pretty, but consider how much more comfortable they are than the old court of tumble-down cottages, with a street about four feet wide. The new barracks are fully provided with water; they are kept in a sanitary condition as good as any palace of prince or peer; they are light and airy: go into any of the old courts in London — there are a few still at Westminster — and see for yourselves the dirty, dilapidated dens in which the people formerly lived. Then, while you think of the advanced standard of comfort, remember the cheap bread, the cheap tea, the cheap meat, the cheap butter, cheese, bacon, eggs, and fruit, which are now offered to the workingman. Not only have his wages gone up, but their purchasing power has advanced as well. If instead of eighteen shillings a week, he now gets thirty; and, if a shilling now could buy twice as much as a shilling did sixty years ago, the standard of comfort for this man and his family has been advanced indeed.

This standard of comfort, this increase in solid happiness, has by long custom and usage become the right of the people. They consider it as much their right as any of the liberties secured by Act of Parliament. This new right constitutes a danger, because a national disaster might run food up to famine prices, and then we should see, what we have not seen for a long time, the tigerish side of the Anglo-Saxon.

We have learned that the old revolutionary cry has quite died away and is almost forgotten. This also is partly the result of the increased comfort. At the same time the advance of democratic ideas has been most marked. Slowly, but surely, the whole power in the country has passed into the hands of the House of Commons. The dominant idea at the present moment of the English people is that the country must be governed for them and by them. This would have seemed a most terrible thing sixty years ago. That we should be governed by workingmen! Incredible! It is, however, the fact; we are governed by the people. Only, what the prophets did not understand, the governing power is delegated by the people to representatives who are not, as a rule, workingmen; one or two workingmen are in the House and doing well; the people, however, are very chary of electing one of themselves; they prefer to send to the House as their representatives such men as John Morley and James Bryce — scholars and students, responsible persons whom they know and can trust; they will not send demagogues and windbags and political adventurers.

You know how they treat the House of Lords; so long as it gives no trouble it may remain; but only on condition that it is recruited from new families. If it were to obstruct any really popular movement — which the House will not do — we should see what would happen. Meantime, the people look abroad and judge for themselves; they observe that the great colonies are all republics and are doing well under republican institutions; if we were not doing well under our institutions, it is certain that the revolutionary cry would be heard again.

As regards work and wages, the people are firmly persuaded that they are entitled to be the dictators; they think that they have a right to exact what wages they think are fair and to work for such hours as they think right. There have been desperate struggles, in which the employers have lost huge sums of money, while the men have suffered terrible privations. It is not for me to discuss in this place the right or the wrong of trades unions; it is enough to state that the workingmen hold this belief and are ready, whenever possible, to act on it.

It is sometimes maintained that the British workman is a socialist — well, it is certainly true that socialism exists in his ranks; yet he is not a socialist. Out of the vague socialism which floats about everywhere are springing up ideas; not adopting the theory of universal equality of work and pay, whether to the able man or to the fool; but ideas as to the rights of labor, ideas as to the power and the share which should be allotted to capital. That these questions should be discussed by the working-classes whom they so closely concern appears to me most wholesome for the State. Capital was formerly a despot; capital took what it pleased and tossed the workman what it pleased; capital can do so no longer.

Capital has now to reckon with a rival power far greater than itself in strength as soon as it proves equally great in resolution. I believe so fully in the sense of justice which underlies everything in our workingman's mind that I do not believe that, however strong he will be, he will ignore the rights of capital.

As to the educational and informing influences of recent years in England, they are only beginning to be felt; everywhere is to be seen the working lad studying in the free library, side by side with those who only read for amusement. The young fellow who studies is going to rise in the world; he will become an employer — or he will become a political leader. We may reckon upon seeing the House of Commons, in fifty years, filled with such popular leaders sent up by the constituents. They will not be necessarily demagogues; they will not be necessarily adventurers seeking fortune and place by politics. Fortunately members of the House of Commons are unpaid — this discourages the adventurers; they will, however, be leaders of the people, sprung from the people.

Everything points to the advance of democratic ideas in all directions. For instance, most of the Civil Service is now open to competitive examination; the lads of the Polytechnics will get these appointments; there are some branches not yet open; these will also be thrown open. Law and Medicine now require a five years' training, at a cost of over a thousand pounds; these professions will be thrown open to the young men who can pass the examinations. It is now impossible for a poor lad to enter the army or the navy; by changes in the management and daily life of a regiment or a ship poor lads will be enabled to win commissions.

These changes for the lads and workingmen, I foresee very clearly. With regard to the position of women I also foresee important changes. At the present moment there is a wild and insensate game of "grab" going on. Women admit of no restrictions; they claim everything; they are not satisfied with the whole intellectual field; they would overrun the field of physical labor. They take the men's work at half the pay; they drive the men out of the country; they remove from themselves the possibility of marriage; they deny the country that increase of population which the country has a right to expect. This folly will presently cease; calmer and more sensible counsels will prevail. It will be recognized that Nature assigns limitations and prescribes certain kinds of work for men and certain other kinds for women.

Such is the contrast between the English of 1837 and the English of 1897. I am not ignorant that there are still many, and great, improvements to be effected; but I hope that my readers who have followed me will acknowledge that we are not only advanced but that we are advancing in new directions which will lead the country into paths hitherto unsuspected or contemplated with dread. I regard these steps without anxiety — that is to say, I recognize the dangers, if these lines are pushed out too far. In all human efforts there is danger — if we always thought of the danger we should effect nothing; there is weakness, unworthiness, among the best of men; yet, with my countrymen, the prospect which opens out before them is so splendid that it makes one forget the danger.

Finally, I would above all things awaken — or restore — the mind of any American who may read these pages to more kindly thoughts of this English land than he may perhaps have entertained. I would offer these pages as a small tribute towards the reconciliation of the Anglo-Saxon race. It is not only with England that you have to do — not only with what Shakespeare called,

> This royal throne of Kings, this sceptred Isle,
> This earth of Majesty, this seat of Mars,
> This other Eden —

You have to do with other nations soon to become great nations — Canada, Australia, South Africa, New Zealand, — all with the same language, the same laws, the same institutions, the same literature, the same ancestors, and yourselves. I have told you something of what these people — your cousins — think and feel at the present day. Ask yourselves a simple question — are the differences between you and ourselves great or are they trifling? Are you on account of those differences going to stand aloof forever from the rest of the Anglo-Saxon race? Or will you take the hands that are held out to you and enter once more into friendship with your cousins?

WALTER BESANT.

GREAT FRENCH WRITERS:

I.—HIPPOLYTE A. TAINE, THE HISTORIAN

A RENOWNED French abbé, on being asked by a young girl for the underlying principle, the clue, so to speak, to French history and civilization, replied, "Taine and Renan are the two eyes of France. Honor them!" And truly through Renan's vivid metaphors we see the great dissolvent forces of the civilization of France, while through Taine's clear, unbiased, practical eyes we see the synthetic, or constructive, forces at work, producing a nation constantly beaten about by a wave of great unrest; from royalty to the *bourgoisie*; from the extreme piety of Ignatius Loyola to the agnosticism of the nineteenth century; from the corrupt, luxurious court of Louis XIV to Rousseau's idea of a "return to nature;" from the carnage of the Bastile to the iron rule of Napoleon;—a nation of fluctuating extremes and unbelievable contradictions.

Following in the footsteps of the subject of our sketch, and using his own methods of investigation, we find that we cannot expect to understand the life and writings of Taine, or any other writer, viewed separately and apart from their environment,—but as a necessary result of his race and hereditary temperament, of the climatic, social and political conditions of his time, and, lastly, as a result of the progress in national growth. And so, taking a brief glance at some of the more important events of French history preceding and following the birth of Taine, we will form, as it were, a frame for this portrait of a great man.

Of the Revolution I need not speak, nor of the momentary exaltation and subsequent degradation of republican principles, under the domination of the French, body, mind, and soul by the remorseless genius of Napoleon; but taking up the thread afterwards we find France hopeful that in the return of the Bourbons she had seen the last of the great Revolution, that a reign of peace had begun. But the years since 1797 had only served to deepen the chasm between the old nobility and the now thoroughly-aroused working people, and Louis XVIII, who was physically incapable of decision, found himself in a position where decisive adherence to the cause of the nobility or the *bourgoisie* might have saved him; but, as Talleyrand cynically remarked, "After twenty-five years of exile, the Bourbons have nothing remembered and nothing forgot."

As a consequence of this vacillating policy of Louis XVIII his reign was full of unrest, revolts, and conspiracies. At his death, in 1824, he was succeeded by his brother Charles X, who was like Louis in being distracted between two policies and opinions, for he was a bitter Royalist and believed that to the victor belongs the spoils; constitutionalism was to him the most hateful of words—he scorned the restricted policy of the sovereigns of England, and once remarked: "I would rather earn my bread than be king of England." He carried absolutism to such extremes that in 1830, after a reign of six years, he was deposed, and Louis Philippe was crowned,—not because of the "Divine Rights of Kings," nor heredity; but because he was the choice of the people, "The King of the Bourgoisie" the nobles sneeringly called him. He dared not make his policy a strong one, for he feared the Chamber of Deputies. His reign of eighteen years was one long series of disastrous events, from the foreign wars, the Spanish marriages, the death of the Dauphin, the uprisings of the Orleanists,—to the triumphal return of the great Napoleon's body from St. Helena,—until on the eve of his being deposed by the Revolution of 1848 Louis Philippe said, "All is possible to France, an empire or a republic, a Bourbon or an Orleanist, or a president—but one thing is impossible,—that any of these should last."

Soon after this, Louis Napoleon, who had been posing as a republican, was chosen president by a majority of 4,000,000 votes, but the magic of his uncle's career had affected him from his boyhood, and he, too, soon began to dream of being emperor. Outwardly a leader of the people, he resolutely set to work to undermine the governing power of the

Chamber of Deputies, until in 1851 that wonderful piece of political mechanism was set in motion, and in one night Louis Napoleon became Napoleon III. So well was this *coup d'état* planned, that no unusual occurrences took place. Napoleon was stupendously blind to all opinions but his own, and, as he lacked the clear insight of his great uncle, he succeeded in embroiling himself and France in home and foreign policies that were suicidal to any good or permanent government.

During these years of political discord we find liberal ideas beginning to dominate French art and literature. In the writings of Voltaire and Rousseau, and later in those of Thiers, Victor Hugo, Guizot, Dumas, Zola, and Lamartine; in the speeches of Louis Blanc and Gambetti, we find the most revolutionary sentiments set forth. The art galleries of the Louvre and the Tuileries became the receptacles of much of the most famous art of the world. In this period of rebirth, in the breaking away from the chains of classicism in art and literature, in the midst of revolutionary ideas, Hippolyte Adolphe Taine was born, April, 1828, at Vouziers, a small town on the Seine, near the Ardennes Mountains. His family was among the intellectual aristocracy of France; all were well educated and fairly prosperous, if not exactly rich; some being members of the Chamber of Deputies. From his infancy he was imbued with the doctrine of the rights of man.

His father was a very learned man and taught Taine Latin, Greek and mathematics, while an uncle who had resided a long time in America and England, made the youth familiar with the English language. All that was English fascinated him from an early period. Even as a boy he found great delight in reading books in the language of Shakespeare. While French novels were forbidden him, foreign literature was thrown open to him without restriction. Indeed his father was so pleased with this linguistic disposition of his son, that the greatest freedom was allowed him in his reading. Being cut off from the imaginative works in his own language, Taine early devoted himself to a study of English classics, and probably no English boy of fourteen knew his Shakespeare, his Spenser, and his Milton, as Taine knew them at that age. The foundation was thus laid for an accurate and extensive study of English literature, to which he afterwards owed a large portion of his celebrity.

When he was thirteen, his father died, and his mother brought him to Paris where she at first placed him as a boarder in a private school; but soon after he entered a preparatory college where he distinguished himself by his intelligence and industry. During all these years he was the object of tender care and unremitting watchfulness on the part of his mother, a woman of warm affections and rare intuition, who, by her sympathy, did much for her talented son.

Before he was twenty he had received three prizes for treatises. These achievements threw open to him the doors of the so-called Normal School, a kind of seminary in which the pupils were trained for professional chairs in the universities. This higher course of study was, however, often used as a stepping stone to a literary career. Edmond About, Prévost-Paradol, Sarcey, were colleagues of Taine, who afterwards became famous. Taine remained at this school for three years, during which time the soundness of his judgment was universally recognized. His fellow students had great respect for him, never venturing to address him otherwise than as M. Taine. He had the power of concentration to such an extent, that it was said he could learn more in one week than most pupils could in a month. This gave him a great deal of leisure which he devoted to the study of philosophy, theology and the Fathers.

This method of instruction was admirably calculated to stimulate the intellectual activities of students. Ample mental nourishment was provided them, the debates were carried on with the greatest freedom, every question being submitted to the touchstone of reason. Day by day the most varied opinions, political, æsthetic, philosophical, and religious, come into collision in these youthful circles, without any restriction from their liberal professors. On the contrary, they encouraged the utmost freedom in the expression of individual views. The instruction was given in the form of debates in which the evidence was summed up by the professor. Two of Taine's subjects were the mysticism of Sainte-Beuve, and the philosophy of Hegel.

Due attention was also paid to physical exercise, but the advantages of the intellectual gymnastics practiced there were enormous. "It was a genuinely French method of education, fertile, efflorescent, but inspiring."

Taine was there at exactly the right time, for when in 1851 the "uncle's nephew" took the helm, the times were not so propitious to freedom of thought. As Napoleon III. had obtained the goal by the help of the clergy, he was bound to give them the promised reward in crying down all liberal ideas. It is not at all remarkable that, after having imbibed such strong feelings of intellectual independence, the students were but little inclined to bear the yoke of spiritual oppression. If a person wished to secure a lucrative position he had to sign a confession of political and religious faith. This Taine would not do, and hence his philosophical theories were spoken of as erroneous and mischievous. Guizot, however, was greatly interested in him and obtained a modest post for him. The salary was small, but his greatest trouble was that he was kept far from his mother and two sisters. The government kept a wary eye on him as a suspect, calumnies were heaped upon him, and when he finally declined to write a Latin ode on the bishop, he was severely censured, and soon after received a government decree removing him to a primary school. Feeling that no great work could be done by him in the government schools, he resigned his position, wondering meanwhile, in his diary, "If it were worth while for the State to bring up giants and afterwards set them to work to collect firewood, instead of felling oaks."

After he had thrown off the yoke of State education, he made his way to Paris where he at once obtained the chair of philosophy in a good, private school, but the persecutions of the government were unremitting, and he was soon forced to give up this position also. In his efforts to be able to wield his pen independently, he gave lessons in private families, content to live upon the merest pittance, so long as he could devote his time to his favorite studies.

When he was twenty-five he took his degree of *Docteur ès Lettres*, on which occasion, in addition to the ordinary Latin thesis, he wrote a French treatise on Lafontaine's Fables, the diametrical opposite to a regular academical thesis. Soon after, he worked it up into a book called "Lafontaine and His Fables," in which form it has already passed its ninth edition. This literary outburst of the young doctor created no small stir, for its style and treatment were entirely original. "It was," says Karl Hildebrand, a "philosophico-historical carnival, after weeks of fasting, upon which the whole reading world threw itself with avidity." In this essay on the great fabulist, Taine stated new canons of criticism, set up a bold paradox and illustrated it from the writings of Lafontaine. He analyzed exhaustively the causes which made Lafontaine a poet, as well as the method by which he constructed his fables, and his aims in writing them; then he described minutely the native place of Lafontaine, then proceeded to demonstrate that Lafontaine, in his own person, combined the prominent traits of his race, and that these traits were intensified in him by the climate, the soil, and the scenery of Champagne.

A great critic says: "Taine analyzes every innermost recess of Lafontaine's brain, every feature of his poetry, so minutely, that the fabulist himself would have been amazed to find himself credited with aims and purposes of which he had not the slightest conception, to hear himself called the 'mirror of his time,' and to discover that he owed his success, not to his own genius and ability, but to the co-operation of the whole race, and the environments in which they lived."

This book, or treatise, was the first distinct formulation of Taine's theory that every human being is born with certain tendencies peculiar to his race, which guide his thoughts and actions, that all his deeds, whether good or evil, are to be traced to these innate sources. These ideas he has ever, and everywhere, asserted since, and, according to his own conviction, proved. According to him, the function of criticism and the critic was exactly counter to those generally held. He looked upon man as a walking theorem, and insisted upon enduring criticism, and always set to work with fixed scientific formulæ, having the very happy faculty of overlooking those unknown quantities which did not go to prove his proposition. According to his ideas, if we wish to study an author crit-

ically, we have only to ask three groups of questions:— 1st, Where was he born? Who were his ancestors? What were the root ideas of his race? 2nd, Under what conditions and circumstances was he educated? What position did he hold in society? To what influences was he exposed? 3rd, What were the peculiar tendencies of his time and how was he affected by them?

Taine would have had no patience with that great spontaneous poet of nature, who said,

> "I only sing as do the birds,
> And pipe but as the linnets do."

This great anatomical critic had three key-words:—race, time, environment, and with these he unlocked Shakespeare's heart, and threaded the gloomy mazes of Byron's mind. I called him an anatomist, but he differs greatly from these men of science, for they lay aside all human passion and individual prejudices, when they begin their researches in medicine, chemistry, botany; while the critic who can do this is not yet born. And, again, the chemist can actually prove in concrete form what he demonstrates, while the critic, who deals with abstract ideas, can only surmise; for these are conceptions which each individual forms for himself.

Taine's critical method cannot therefore be called a science, but merely an aid to reliability. Zola says of him: "Taine is a thought-mathematician, a slave to the consistent application of his own theories, and the reading of his works is often as exciting as a lecture on geometry; the real Taine is a poet, with a style vigorous and glorified, vastly preferable to the mechanician he would have us believe him to be." Karl Hildebrand says: "Taine's philosophy is only the frame in which the always lifelike portraits of the time are set; it is a pity that, in the artist's eyes, the frame should be more important than the picture; indeed that he would have us believe that these beautiful portraits exist only for the sake of the frame, to which he has so accurately fitted them."

True to his principle of solving the problem of every great man's life and work, M. Taine draws, in the case of the first Napoleon, a masterful picture of the effects of heredity. "Napoleon," our author says, "is not a Frenchman, nor does he belong to the eighteenth century; he belongs to another race and epoch— He is an Italian of the fifteenth century." There is no explanation of him to be found in his immediate environment, so the great critic bids us look back to the petty Italian princes of the fourteenth and fifteenth centuries, from whom his parents were descended, for the real key to this gigantic power. Just when civilization had begun to prune and hamper the Borgias and their contemporaries, the Bonaparte family migrated to Corsica— where the seed was planted in precisely the right soil to have produced a Machiavelli or a Borgia or a Napoleon. There, apart from law and order, where ethical ideas had not yet permeated, Napoleon Bonaparte was reared — his countrymen, a primitive people, to whom strife and intrigue were the ruling forces — used poniards, poison and lies, as the ordinary weapons. He was a hereditary vendetta. Just as the great Italians were men of action rather than speculative, military adventurers, usurpers, hypocrites, so we see in Taine's picture of Napoleon an historical kinship to them. His tact was the "tact of circumstance," his motive a selfish one. The savage had in him but a very thin veneer. The Revolution and the subsequent upheaval of Europe offered just the opportunity that he needed; for just so far as civilization and morality had advanced in Europe, just so far he stood without a rival.

As those early intriguing Italians were distinguished for what Taine calls the "integrity of their mental instrument" so Napoleon saw men as facts, not human beings, he studied places not maps, things not symbols, and human passions rather than histories. Like the great Catherine, Napoleon said, "he operated not on paper but on the human hide which was ticklish." Philosophy and abstract problems glided over him — he was a political engineer operating on men through their passions.

To Napoleon the words justice and law did not exist except as he found them in the Code. Might was right with him. Other conquerors have depleted the treasuries of their country, have caused great loss of life, but behind all was their ideal of the State for a motive; but personal ambition was the motive for all of Napoleon's acts — he built up not a State but the colossal "Moi." That over three million men had lost their lives,

that France was bankrupt, that her territory was lessened, that he had made her an object of suspicion and hatred to all Europe affected Napoleon not one whit. The very gall of bitterness was to him that he had failed! His constructive imagination was stupendous. Taine says: "Napoleon was the posthumous brother of Dante and Michael Angelo, one of the three sovereign minds of the Italian Renaissance. The others operated on paper and marble, while Napoleon worked on the living, sensitive, suffering flesh and heart of humanity."

To resume the sketch of Taine's life—in 1854 the French Academy offered a prize for the best essay on Livy. Taine, full of his new method, produced an essay in which he proved Livy to be an oratorical historian. The style of the essay was clear, vigorous, and artistic, and it was unanimously decided to be the best, but the prize was refused him because in his zeal to support his theories, he had betrayed deficiency in seriousness and had not shown sufficient respect to the genius of the man whom he treated.

Soon after this a throat-trouble seized Taine, and he was sent to the Pyrenees to enjoy the outdoor life, but the enjoyment we hear most about, was the delight with which he read Shakespeare, committing whole scenes to memory. Besides improving in health, while there he wrote a book of travels, called "A Trip Through the Pyrenees," which differed greatly from the ordinary book of travels, in that it dwelt, not so much upon facts, as upon the artistic, intellectual side of the landscape; it was not the outer but the psychological side which interested him. He not only told you that a certain view was beautiful, but he analyzed the causes from which its beauty sprang. Not long after this he wrote a book called "French Philosophers of the Nineteenth Century," a witty résumé of the so-called official philosophy in which it was said he slew men's most beloved tenets with the sacrificial knife of ridicule. About this time he produced the first set of critical essays on La Bruyère, Racine, Balzac, Guizot, Saint-Simon, and Michelet.

When he was thirty-two he went to England to read in the British Museum for his great future work. While in London he made many friends, and was generally conceded to be the ideal of an intelligent foreigner.

Taine's powers of observation and desire to deduce proofs for his theories have given us a most delightful and racy book of "Notes" on his impressions of England — life, homes, schools, art, and lastly its men — for as he says, "At bottom the essential thing about a country is Man. Through him the age may be deciphered and the men through the age."

Though he gives full credit to the fine old type of English gentlemen, in their schools and hospitalities — still he gives us some caustic touches in his descriptions of the different types of men he studied. The fine human animal looking as though he had been chosen for an exhibition of human products, like prize beets and cauliflowers; the phlegmatic, frigid, starched individual "where impression did not produce expression," and the active, energetic force-loving type in whom the fighting instinct is highly developed. To be sure he makes the fogs, the climate, the cold, their government, the Puritans, and the Vikings mostly answerable for these traits. Drunkenness he also lays to the fogs. Their education he found more natural and spontaneous than that of the French, although he does liken the interior of an Englishman's head to Murray's Handbooks "which contain many facts but few ideas."

To a Frenchman he says literature must be pleasing, to an Englishman usefull. Of their homes, parks, ancient architecture and poetry his praise was unstinted. His insight into English thought and literature is wonderful. No other foreigner has begun to give so clear an exposition of the real pith, the beauty and pathos of English literature as Taine in that most readable of books "History of English Literature." Though he insists everywhere on upholding his theories, yet the vigor, the illumination, the truthfulness of his descriptions remind one of a series of flash-light pictures — sometimes distorted but always strong and impressive.

His chapters on the early development of English literature, of poetry and the novel, are masterly settings forth of the growth of that wonderful vehicle the English language. In his insight into the mind of Shakespeare, Milton, Burns, and Carlyle he shows himself a poet as

well as a philosopher. Shakespeare he calls "the inspired result of England's great age. Externals did not make him, his poetry came from within — he was all imagination; his thought flies, ours creeps; he is frenzied, we are cold — for every word our ear hears the mind sees a thousand pictures;" and again he calls Shakespeare "the creator," since he has peopled a whole world for us with entities not statues. Of his chapters on tragedy, comedy, Shakespeare's women, his heroes, and his fools — one must read them to realize fully the power and clearness of Taine's vision. Milton he calls "a fighter, the result of the Reformation, just as truly a fighter with his pen as the Ironsides with their swords, a mighty, superb, lucid mind, limited in imagination." In "Paradise Lost" he sees results of the theological discussion of the day — of Puritanism and the cold rigidity of the times. Adam and Eve he likens to a pair of English householders who entered Paradise *via* England. Their philosophical compliments and moral similes, and their dissertations seemed to Taine to prove that not only they, but Jehovah, Satan and the angels, had taken their B. A. degrees at Oxford.

Of Swift he wrote: "Wretched he who knows himself and mocks himself! What madman's laughter — what a sob in this hoarse gaiety!" His delineations of the early novels of Richardson and Fielding (author of Tom Jones) are capital. Of Sir Charles Grandison, the world hero, he says: "He is great, he is generous, pious, irreproachable; he has never done a mean action, nor made a wrong gesture; his conscience and his wig are unsullied! Amen! Let us canonize him and stuff him with straw!"

Of poetry and the poets he writes at fullest length of Burns, whose poetry is as natural as the purple gorse on his native hills; — of Byron whom he calls "the poet of the individual as opposed to Goethe the poet of the universal." He also calls Byron the prey of the malady of his age. Dickens is to Taine a Hogarth in fiction, Thackeray the mirror of his age. Tennyson he complains of as cold, too graceful, too ornate.

Of the many that space will not allow to be mentioned, one can only say that, like Shakespeare, Taine has made each one stand out as a living acting human being — the result of his age, his heredity and environment.

But let us resume our narrative of Taine's career. M. Taine was appointed examiner in German and French at the Military Academy of Saint-Cyr. During this period he travelled extensively in the Netherlands, Italy, and Greece. On his return he was made professor of æsthetics and the history of art in the School of Fine Arts, Paris. Here he gave, in the form of lectures, his wonderful contributions to the literature of art:—"The Philosophy of Art," "The Ideal in Art," "Philosophy of Art in the Netherlands, Italy, and Greece." In these books he showed himself not only a delicate, but a learned, critic. A few months after this he completed and published the three volumes of his "History of English Literature," and later, a series of monographs on Macaulay, Dickens, Carlyle, Mill, Thackeray, and Tennyson, taking them as representative types of the different classes of literature. Notwithstanding the style, research, and brilliancy of coloring of this history of English literature it was condemned by the French Academy as being heretical in religion and philosophy.

When he was forty years old he married the daughter of an artist near Savoy, where for some years he had spent the summers and falls, his winters and springs being spent in Paris at his literary work.

He now planned to write a history of German culture and literature, but the outbreak of the Franco-Prussian War made everything German so hateful to the French, that he was forced to give up this design. In temperament, he seems almost German in his devotion to facts, and it is said that he was greatly pleased on being told that the Germans considered that he bore an intellectual resemblance to Hegel and Herder. Soon after this he commenced his most important life-work, a history of France, under three heads: "The Ancient Régime," which describes the encroachment of the upper classes on the lower; "The Revolution," which deals with the wrongs committed by the Red Republicans, and "The Modern Régime," which comes down to us with one unfinished chapter, and deals with the conclusion of the struggle.

Far from being an agnostic and a scoffer, Taine was tolerant of all religions, and spoke once of the Eleusinian Mysteries, the religious rites of the Greeks, in which only the priests could officiate "as the shadowy underworld, where men see the roots and not the flowers of things," and added that the Eleusinian Mysteries were all about us, but that nature never revealed them except to the patient listening soul. His home was the centre of hospitality, where he loved to shut himself up with his charming wife, children, and a few select friends, and live as though there were no Paris, no problems, no method to be sustained. From a boy, he loved the country and spent many hours roaming about, and as he grew older, he was often completely lost to his friends in Paris while he disappeared for weeks to meditate among the mountains. Using his own method, we might say that the rugged scenery of the Ardennes Mountains did much to fashion his style and was the basis of his stupendous metaphors.

To return to his home life. He loved to sit before the open fire and as Browning said, "evoke visions, in his gently sympathetic voice." Browning, by the way, was one of his closest friends. They met in Italy when Browning was but twenty, and a lifelong intimacy began. They were both equally rapacious in their search for facts, and were also picturesque psychologists, beside being poets. Browning understood Taine as few other men have done, while Taine was always greatly vexed by any allusion to Browning's obscurity.

Taine's only daughter says of her father: "My father was at heart a Druid and said that he found the infinite heart and soul of life in the forests. I have often made trips through the parks of Paris with him, while he told me how much he loved the trees and flowers, and how he knew the history of every remarkable tree in Paris. In the long winter evenings among the mountains as we sat before the open fire, nature seemed to throb around us, and the wood ashes to sprout, and green, and burgeon, with the birds they used to hear, while we listened to such a poetry of the greenwood from my father as I have never heard since."

City life never seemed to agree with Taine, and, though he had taken many rests, when he was sixty-four his overworked system gave out, and he shut himself up in his mountains, resolved to finish the "Modern Régime" before the end came. During these months he took an occasional trip to Italy or Switzerland, or, when at home, listened to his wife read from the lives of the great artists. On the afternoon of March 5, 1893, he was found in a semi-conscious state, with the last chapter of the "Modern Régime" before him. He was loth, even then, to stop his work, but his rest was nearer than he thought, for he died the next day. He was buried in a country grave by the Lake of Annecy, one tomb alone among the hills, overlooking the blue lake he loved so well, and shadowed by the mysterious mountains.

During the sixty-five years of his life Taine was an indefatigable toiler and accomplished an almost unparalleled amount of work. The aim of his life was to substitute the reign of fact in literature for that of pure illusion. He once said that he always felt like bowing his head in the presence of a verified fact. His death closes an epoch in French literature, and, indeed, the literature of the world loses in him a most vivid personality and a fearless disciple.

M. B. JORDAN.

"The projected annexation of the Hawaiian Islands by the United States of North America," says a Russian journal, "must be considered a political event of grave importance, on account of the consequences to which it may lead and its influence on the future of the New World. It constitutes the first decisive step away from that programme and policy which the great Western republic has heretofore so undeviatingly followed since the beginning of its existence. That nothing serious will result from the protest of Japan can hardly be doubted. Nor does it strike us as of any particular consequence that the impression produced on England by the sudden departure from the anti-colonial policy of the United States is not marked. English possessions are hardly threatened by the new policy. In fact, we attach little importance to the current talk about the alleged danger to French and German colonial interests, which English papers are disposed to magnify. The real point is that annexation by the peculiar method of a treaty may serve as a precedent for the acquirement of Cuba by exactly the same process."

STUDIES IN LITERATURE:

NOVELS AND NOVEL-READING

FICTION: ITS FORMS AND EFFECTS

IT has been somewhat naïvely suggested that novelists — by showing how men and women behaved in certain difficult circumstances, and what results followed certain courses of action — serve as guides and counsellors to all who find themselves in like situations in real life. But in reply to this it may be said that rarely does a man find himself in a situation precisely similar to that devised by a writer, and, even if he does so, the fictitious hero's conduct is seldom the model upon which he bases his own. It is hardly to be believed that novels afford much practical aid to men and women in the various trials and tribulations of this mortal life. The modern story hinges almost entirely upon love, and, interesting as this topic is, especially to women, there are many crises in real life into which it does not enter as an element.

Nor would anyone seriously contend that stories of mere physical prowess and thrilling adventure, like some of Robert Louis Stevenson's tales, furnish rules of conduct in the actual world of struggle and suffering. When kept within reasonable limits, they are wholesome enough reading; but when they are full of wild lawless doings, of incredible feats, and of cruel or senseless practical jokes, they are responsible for much harm. There can be no doubt that headstrong boys have often been led on to dishonesty and disgrace, and weak girls to folly and ruin, by insane tales of heroes who ought to be wearing the striped garments of a State prison, and of heroines who would be fit inmates of a lunatic asylum.

Yet a story may be full of wildly sensational and highly improbable incidents without being wholly worthless. Many eminent men have found pleasure in the perusal of such stories. Their well-constructed plots and ingeniously-concealed mysteries keep the reader's attention enchained, and the rapid succession of startling events weans him from the contemplation of his own cares, sorrows, and perplexities. Rider Haggard's stories, despite their lack of literary beauty, fascinated the late Emperor Frederick of Germany as he lay sinking under a fatal malady, and have, doubtless, cheered many a sufferer of humbler station.

Historical romances, such as those of Sir Walter Scott, deal with times so different and manners so variant from our own that we admire them as literary masterpieces and as brilliant pictures of bygone days rather than as practical codes of conduct. Their antique air, charming as it is, seems to dissociate them from our rough and ready every-day life. Charles Dickens's novels with a purpose contributed in their day to the removal or abatement of many social abuses; but the purpose having been served, the stories have been rendered less valuable. Thackeray's pungent satires upon the follies and insincerities of fashionable life are remarkable for the brilliancy of their style and the truth of their criticisms, but there is still a flourishing crop of fops, snobs, and frivolous women.

Novels of "high life," of passion, and of the detection of crime, seem all equally useless. The writer who employs the *nom de guerre* "Ouida," in spite of, or because of, a literary style which is often overcolored and meretricious, has many readers and admirers; but her stories deal so largely with impossible heroes and questionable heroines, and furnish so many scenes glowing with extravagant luxury, that they serve to dazzle the ordinary reader's judgment and to unsettle his moral principle rather than to strengthen his reason and confirm his convictions. Few men were more fitted by their tastes and opportunities to write stories of "high life" than Benjamin Disraeli, in whose novels we find many pictures of fashionable men and women by one who was thoroughly familiar with them, many touches of keen, worldly wisdom, a deep knowledge of affairs, as well as shrewd and kindly views of women and their influence. Yet even these, clever and truthful as they are, do not tend, except quite indirectly, to elevate the reader, though they certainly increase his knowledge of the world.

Probably one of the chief charms of the novel of fashionable life to the average reader is to be found in the fact that in it men or women of a wide, or supposed wide, acquaintance with the gaieties, follies and wickedness of the upper strata of society, furnish alluring pictures of a more cultured, refined and luxurious existence than the reader himself enjoys. The reader gets glimpses of a gay world, and views life, not as it is according to his own daily experience, but as in day-dreams he wishes it to be. Undoubtedly the knowledge of what the French — who sometimes display symptoms of Anglomania — call "hig lif" is derived by the middle classes from the stories that fall into their hands; and, as the characters depicted are often of an abnormal and exaggerated type, and not fairly representative of the class whose habits they pretend to portray, they serve rather to mislead than to inform. Not infrequently, too, they are written by people who have little intimate acquaintance with the world they essay to describe. Their disciples, blindly following blind leaders, fall into the ditch of misapprehension, or are swallowed up by the slough of ignorance.

Honest attempts by writers of competent literary skill to give clear and truthful pictures of healthy, wholesome lives, of difficulties bravely met, of courage, virtue and endurance; not aiming at a fictitious glamour derived from gorgeous millinery and fast life — tales such as these are highly to be commended. But many much-read stories are by no means of this description. It is said that the tales printed in the commonest weekly papers have an almost unvaried theme: a girl of humble birth, but great beauty, loved by a man of rank and wealth, whom, after extraordinary difficulties, and all sorts of opposition from misguided parents or guardians, she eventually marries. Into the future history of the ill-mated couple the writers wisely do not inquire, and the readers are equally incurious. The attractiveness of these stories, which are, we believe, largely read by nurse-maids, milliners' apprentices and other girls in the humbler walks of life, consists in holding out hopes, foredoomed to defeat, of a great rise in the social scale; the reader thus being made discontented with the daily round of humdrum duties and unexciting work that fall to the lot of the vast majority of us all.

As to the psychological and religious novel of the *Robert Elsmere* type, a very clever literary critic has said that its amazing popularity among his own countrymen is due to the fact that the *genre ennuyeux*, or the boresome kind, is the only form of literature that Britishers thoroughly enjoy. How the critic would explain the still more surprising popularity of Mrs. Humphry Ward's story in the United States it is impossible to say. At any rate stories of this sort are so few that they hardly make up a distinct species. The novels which delve deeply into the profound problems of philosophy and disclose the results of the ripe scholarship of a mind like George Eliot's are far out of the range of the ordinary novel-reader, who would almost as soon think of studying an Icelandic saga or the Apocryphal books as of wrestling with "Daniel Deronda." Of course special circumstances may create a strong popular demand at the circulating libraries for a book which very few of the borrowers are capable of reading intelligently, or would ever choose of their own accord.

The novel of passion, however artistic may be its workmanship, is little to be commended for its spiritual results. Whether merely sensuous, like "The Quick and the Dead," or full, like the average French novel, of illicit love and marital infidelity, it is likely to excite prurient desires, and to fill the reader's mind with unholy images; to teach men and women to take low views of each other, and to foster the belief that any man may be ensnared by an unscrupulous coquette, and that every woman has her price.

The French novel is, no doubt, often brilliantly written and cleverly constructed; but a story, the moral influence of which is corrupting, must not be defended on the ground that it is a work of art, and that morality has nothing to do with Art. The doctrine of "Art for Art's sake" has, however, lately been so utterly discredited that it is hardly necessary to spend time in refuting it. Suffice it to say that literature, like other arts, has its proper subjects and its limits, and that it is no more to be divorced from ethics, than is any other domain of human activity. Novels are works of

the imagination, and it ill becomes those whom Nature has dowered with a brilliant fancy to employ it in sapping the principles, uprooting the beliefs and imperilling the moral sanity, of their less-gifted fellow-mortals.

The realists form a very important school of fiction-writers, which excuses everything on the ground of merely showing facts as they are. So the lens of a microscope gives us a certain kind of truth, and discloses to us much beauty, but we want truth on a larger and more comprehensive scale than this; not the truth as shown either by the microscope or the camera, but as seen by the normal vision of a keen-sighted man. The crowning glory of the Greek was his perception of truth in its proper proportions: Zola may give us truth of a kind, but it is the hideous, repulsive truth of the sewer, the morgue and the dissecting-room. Let those who will seek truth in these unsavory spots; we prefer to look for it in the sun-lit fields and the cheerful market-place; in the haunts of living men, and not in the dens of ghouls. We want truth that does not smell revoltingly. Truth of the Zolaesque kind is too "high" for our stomachs: it nauseates them. The rule laid down by Aristotle for tragedy is the right one for fiction also: it should purify our passions by exercising them upon the right objects.

Yet literary work, while it should produce the right impression, must not be merely impressionistic; this is to avoid Scylla and fall into Charybdis. It is not enough to fling a paint-pot at a canvas and call it a picture. There must be painstaking, exact work, subordinate to the fundamental impression to be created. Literary work, like pictorial, must be accurate enough to bear inspection of its details, but it must not be merely detail without effect. Just as blurs and blots of color do not make a picture, so the most minutely painted carpet or cabinet does not. A thistle so exactly reproduced that no donkey could view it without emotion, has no high spiritual value.

As to matter—not all themes are fit subjects of pictorial or literary representation; the right subjects are to be chosen, and they are to be treated in the right way. It is in supposing that the ulcers and gangrenes of our social organism are the proper, and almost the only, subjects of literary portrayal that Zola and his disciples have erred. Theirs is the letter that killeth. But it is the spirit that giveth life.

Just as an instantaneous photograph of a galloping horse does not convey to our eyes the idea of a rapidly moving quadruped, but that of a strange animal executing gymnastic feats and contortions that the human eye never saw, so it is quite possible to construct a story photographically accurate, and yet false to all the laws of beauty—artistically a lie. Men and women must be presented by painter and writer, not as they actually are during certain relatively infinitesmal instants, but as they appear to their fellow-men and women throughout a reasonably long period. Of course transient passions and fleeting emotions may be depicted, but the work must not be so done as to seem to be the whole of the character. They must be kept strictly subordinate to the presentation of the character as an artistic unity; it is the total effect which is the important matter.

Though we may not be what Mr. Hamlin Garland has recently termed "veritists," yet we want truth; not the distorted and travestied truth of an instantaneous photograph, but that of a picture of a man of taste, feeling, and adequate technical skill. As a sketch of a runner by an artist gives to him who looks at it the idea of rapid motion, so a literary study of a character should convey to the reader's mind a clear idea of the character as conceived by a skilled observer. The painter does not paint things as they are, nor does he choose a point of view so near as to cause distortion. The lamp-post in a street vista is not drawn ten feet high, though a tape-line would give that measurement; the artist's eye does not see it so. The good picture shows us things as they appear under the conditions of light and shade chosen by the painter; the strong story should present to us men and women as they look under the circumstances of the writer's choice.

Similarly, the writer, though his vision is keener than that of the ordinary man, should tell us what is there to be seen by those who are trained to see it, and the ordinary reader, when the subject is one within his ken, should

feel that the presentation is true, though he may be quite willing to confess that he himself would not have seen so much, or, if he had seen it, would have been unable to express it so well, and make it so clear to others as the literary artist has done. For literature is a fine art, working in words, words — a more delicate and plastic material than the pigments of the painter or the marble of the sculptor and architect. As the materials are more delicate, so are the effects more subtle.

Least commendable of all works of fiction are stories of abnormal crime, for these are little more than enlarged "Police Gazettes," from the perusal of which no human being ever yet rose with lightened heart or strengthened courage.

Probably the tales which make men laugh do, after all, most good; for genuine laughter is a wholesome thing, of which there is all too little in the world. Laughter clothes the bones with flesh and sweeps away unhealthy conceits from the mind. Laughers are generally honest men: tricksters do not laugh, they only smile and smile.

Differing from the classes of tales which have been mentioned is the short story. This aims at placing upon the canvas by a few rapid touches certain characters, and exhibiting them as moved by certain impulses, and actuated by certain views of life. Its object is not so much to set forth types as to exhibit characters. The chief charm of work of this kind is an æsthetic one. The reader delights to note the sure touches by which a character is presented to his mental eye, and the art of the writer is displayed not so much in telling the story as in letting it tell itself. The author must not obtrude his own personality: he must not talk about the characters he introduces, but must let *them* talk. He should endeavor to present, not the eccentric and abnormal, but the ordinary and usual; and the more accurate his presentation is, the better the story. J. M. Barrie's "Window in Thrums" is an excellent example of this kind. It shows us the inhabitants of a little obscure Scotch village as they "live, move and have their being;" its fidelity is greater than that of a photograph, for its author all the time keeps a true artistic perspective. For truth — not photographic, but artistic — is an essential element in the short story.

In conclusion, it may be said that the reading of the ordinary novel by the average person is a species of intellectual dissipation, having much the same effect upon heart, mind and character as alcohol-drinking and other indulgences have upon the body: that is to say, harmless or even beneficial if practiced in moderation, but injurious in excess. Myriads of readers have so long fed their minds upon light and unsubstantial food, spiced and sweetened to suit the prevailing taste of the moment, that their intellectual fibre has become weakened and incapable of assimilating stronger aliment. Physically adults, mentally they are babes and sucklings.

ARTHUR INKERSLEY.

"OUIDA" (LOUISE DE LA RAME), THE NOVELIST

OUIDA is not, and never was, an artist. That, strangely enough, is the reason why she has been so little appreciated by the reviewers. The artist presents his ideas in the finest, strictest form, paring, whittling, polishing. In reading his finished work, none but a few persons note his artistic skill, or take pleasure in it for its own sake. Yet it is this very skill of his which enables the reviewers to read his work with pleasure. To a few persons, artistic skill is in itself delightful, insomuch that they tend to overrate its importance, neglecting the matter for the form. Art, in a writer, is not everything. Indeed, it implies a certain limitation. If a list of consciously artistic writers were drawn up, one would find that most of them were lacking in great force of intellect or of emotion; that their intellects were restricted, their emotions not very strong.

Writers of enormous vitality never are artistic; they cannot pause; they must always be moving swiftly forward. Mr. Meredith, the only living novelist in England who rivals Ouida in sheer vitality, packs tight all his pages with wit, philosophy, poetry, and psychological

analysis. His obscurity, like that of Carlyle and Browning, is due less to extreme subtlety than to the plethoric abundance of his ideas. He cannot stop to express himself. If he could, he might be more popular. The rhapsodies of Mr. Swinburne, again, are so overwhelmingly exuberant in their expression that no ordinary reader can cope with them; the ordinary reader is stunned by them before he is impressed. When he lays down the book and regains consciousness, he has forgotten entirely what it was all about.

On the other hand reticence, economy, selection, and all the artistic means may be carried too far. Too much art is, of course, as great an obstacle as too little art; and Walter Pater, in his excessive care for words, is as obscure to most people as are Carlyle and Browning, in their carelessness. It is to him who takes the mean of these two extremes, to that author who expresses himself simply, without unnecessary expansion or congestion, that appreciation is most readily and spontaneously granted.

For my own part, I am a dilettante; I* love best in literature delicate and elaborate ingenuities of form and style. But my preference does not keep me from paying due homage to Titanic force, and delighting, now and again, in its manifestation. I wonder at Ouida's novels, and I wonder still more at Ouida. I am amazed when I think of that lurid sequence of books and short stories and essays which she has poured forth so swiftly, with such irresistible *élan*. What manner of woman can Ouida be? A woman who writes well never writes much. Even Sappho† spent her whole life in writing and rewriting some exquisite, isolated verses, which, with feminine tact, she handed down to posterity as mere fragments of her work. In our own day, there are some ladies who write a large number of long books, but I am sure that the "sexual novel" or the "political novel," as wrought by them, must be as easy to write as it is hard to read.

Ouida is essentially feminine, as much *une femme des femmes* as Jane Austen or "John Oliver Hobbes," and it is indeed remarkable that she should yet be endowed with force and energy so exuberant and indefatigable. All her books are amazing in their sustained vitality. Every page is a riot of unpolished epigrams and unpolished poetry of vision, with a hundred discursions and redundancies. She cannot say a thing once; she must repeat it again and again, and, with every repetition, so it seems to me, she says it with greater force and charm. Her style is a veritable cascade. And, all the while, I never lose interest in her story, constructed with that sound professional knowledge, which the romancers of this later generation, with their vague and halting modes, would probably regard as old-fashioned. Ouida grips me with her every plot, and — since she herself so strenuously believes in them — I can believe even in her characters. True, they are not real, when I think of them in cold blood. They are abstractions, like the figures in early Greek tragedies and epics before psychology was thought of — things of black or white, or colorless things to illustrate the working of destiny, elemental puppets for pity or awe.

Ouida does not pretend to the finer shades of civilized psychology. Her men and women of Mayfair are shadows, as I see when I am not under the direct spell of her writing, and she reproduces real life only when she is dealing with childish or half-savage natures — Cigarette, the *vivandière*, Redempta, the gipsy, Italian peasants, dogs and horses. She cares for the romance and beauty and terror of life, not for its inner secrets. Her books are, in the true sense of the word, romances, though they are not written in Wardour Street. The picturesqueness of modern life, transfigured by imagination, embellished by fancy, that is her *forte*. She involves her stock-figures — the pure girl, the wicked woman, the adorable hero and the rest — in a series of splendid adventures. She makes her protagonist a guardsman that she may describe, as she alone can, steeplechases and fox-hunts and horses running away with phaetons. Or she makes him a diplomat, like Strathmore, or a great tenor, like Corèze, or something else — anything so that it be lurid and susceptible of romance. She ranges hither and thither over all countries, snatching at all languages, realizing all

* A writer in the "Saturday Review," London. See issue for June 3, 1897.

† See Encyclopædia Britannica, Vol. XXI. p. 302.

scenes. Her information is as wide as Macaulay's, and her slips in local color are but the result of a careless omniscience.

The fact remains that Ouida uses her great information with extraordinary effect. Her delight in beautiful things has been accounted to her for vulgarity by those who think that a writer "should take material luxury for granted." But such people forget, or are unable to appreciate, the difference between the perfunctory "faking" of description, as practiced by the average novelist — those who pile up the adjectives, *i. e.* "soft carpets," "choice wines," "priceless Tintorettos" — and description which is the result of true vision. Ouida's delight in Art is no more vulgar, so far as I can see, than Wordworth's in Nature. Ouida, like Wordsworth, has a sense of beauty. There is nothing vulgar in having a sense of beauty — so long as you have it. With their fair silken moustachios and their glengarries, and their velvet jackets, Ouida's guardsmen, pegs for luxury and romance, are vastly stimulating. I should like to have peered through the cloud of "Turkish" that did always involve them, and have seen Lord Vaulerois tossing aside a pile of millefleurs-scented notes and quaffing curaçoa, as he pondered the chances of Peach-Bloom for the Guards' Steeplechase, or the last mad caprice of Léla Liette!

Too languid, as he lay there on his divan, to raise the vinaigrette to his nostrils, Vaulerois was one who had served his country through more than one campaign on the broiling plains of the Sahara; he, who, in the palace of a *nouveau riche*, had refused the bed-chamber assigned to him, on the plea that he could not sleep under a false Fragonard, had often camped *à la belle étoile* in the waste-places of Central Asia; thrice he had passed through the D. C. as calmly as he would swim the Hellespont or toss off a beaker of rosy Comet-Wine; with his girlish hands, that Duchesses envied, he had grappled lions in the jungle, and would think nothing of waiting for hours, heedless of frost and rain, to bring down some rocketer he had marked in a warm corner at Crichel or Longleat.

Familiar was Vaulerois with Cairoene Bazaars as with the matchless deer-forests of Dunrobin, with the brown fens round Melton Mowbray as with the incomparable grace and brilliance of the Court of Hapsburg; *bienvenu* in the Vatican as in the Quirinal; deferred to by Diplomats and Décorés in all the *salons* of Europe, and before whom even Queens turned to coquettes and Kings to comrades; careless, caressed *insouciant;* of all men the beloved or envied; inimitable alike in his grace of person and in the perfection of his taste; passing from the bow-windows of St. James's to the faded and fetid alleys of Stamboul, from the Quartier Bréda to the Newski Prospect, from the citron-groves of Cashmere, the gay fuchsia-garden of Simla, to the hideous chaos of Illinois (*sic*), a region scorched by the sirocco, swept by inextinguishable prairie-fires, sepultured in the white shrouds of remorseless blizzards, and, as though that were not enough, befouled with the fumes and crushed with the weight of a thousand loathsome cities, which are swift as the mushroom in their growth, far more deadly than the *fungus fatalis* of the Midi — it was here, passing with easy nonchalance, as the foal passes from one pasture to another, with a flight swifter than the falcon's, luxurious in its appurtenance as a Shah's seraglio; it was here, in these whirling circles of intrigue and pleasure and romance, and in this span of an illimitable nomady, that flew the nights and days of Philip, Ninth Marquis of Vaulerois, as the world knew him — "Fifi" of the First Life.

I am glad that in her latest book, "The Massarenes," Ouida has not deserted "the First Life." She is still the same Ouida, has lost none of her romance, none of her wit and poetry, her ebullitions of pity and indignation. But the old "naughtiness" and irresponsibility which were so strange a portent in the medio-Victorian days and kept her books away from the drawing-room table, seem to have almost disappeared; and, in complement of her love of luxury for its own sake, there is some social philosophy, diatribes against society for its vulgar usage of luxury. But, though she has become a mentor, she is still Ouida, still that unique, flamboyant lady, one of the miracles of modern literature. After all these years, she is still young and swift and strong, towering head and shoulders over all the other women (and all but very few of the men) who are writing English novels.

MAX BEERBOHM.

THE PITTI PALACE, FLORENCE, AND ITS ART TREASURES*

THE Pitti Palace (Palazzo Pitti) is one of the most interesting buildings in Europe. Though more than four centuries have elapsed since it was built, it is still in perfect repair, still a royal residence. Time has left no devastating traces on its solid walls, though the grand historic family of the Medici, whose name and fame lend a charm to the place and fill its spacious rooms with phantoms of the past, has become extinct. In 1440 Luca Pitti, a rich and powerful merchant of Florence, a rival of the Medici, desired to build a palace which should be the finest ever owned by a citizen of Florence. He employed Brunelleschi to design the building. This artist carried on the work to the windows of the second storey, when he died, leaving the building in this unfinished state, in which it remained for many years. It was finished by Ammanati, who seems to have carried out Brunelleschi's design, though he made some additions to it.

Brunelleschi must have sought the unique in style when he designed this renowned palace; he certainly found it more like a fortress or a prison than a palace, for "grand, gloomy and peculiar" it stands amid the palaces of Italy. It is imposing from its immense size and fine proportions, but it is built of rough stone, entirely without ornamentation. This is all the more singular as it was built in an age when profuse decoration was the fashion, and marble was used for all ambitious buildings. Its simplicity adds to its grandeur. The beautiful Boboli gardens adjoining soften its austere and rugged aspect, producing a charming picture.

The whole façade of the palace is six hundred and sixty feet in extent; this includes the wings. The central part, without the wings, is four hundred and sixty feet in length, three stories high (each storey is forty feet), having very large windows, twenty-four feet apart from centre to centre. It was Ammanati who introduced the arched windows on the first floor, where formerly there were small, rectangular windows, not far from the ground, with two portals for entrance.

Like the Pyramids, the solid masonry of the Pitti palace was evidently intended to endure for ages, but the Pyramids now stand in a desert, while the Pitti palace rises amid the churches and palaces of beautiful Florence, surrounded by the life and bustle of a great city. Within, the palace is richly decorated and furnished. Nearly all the first floor is devoted to the picture gallery, which contains many fine paintings by the masters. The stranger has free access to the picture gallery, as it is open daily, and can find many opportunities to study the masterpieces. These rooms are not only magnificently furnished, but comfortably, as well, having chairs and ottomans scattered about for the use of visitors; they are also well heated in winter, a rare thing in Europe, where people sit and shiver with shawls and wraps around them, instead of lighting a good fire, as an American would. When the chilly winds from the snow-capped Apennines invade the city, the warm rooms of the Pitti gallery are very grateful.

By applying to the director, permission may be obtained to copy the paintings. The picture gallery comprises a series of splendid apartments, elegantly frescoed. The apartments are named after the planets. The frescoes were most of them done by Pietra de Cortona, an artist admirer of Duke Cosmo I., a liberal patron of art.

The numbers on the pictures commence in the hall of Venus. Here the frescoes on the wall represent the triumph of Reason over Pleasure. Minerva rescues from Venus a youth (Cosmo) and conducts him to Hercules. In this apartment are pictures by Albert Durer, Salvator Rosa, Tintoretti, Rubens, Rembrandt, and other great artists. Most noticeable are the landscapes by Salvator Rosa and Rubens. The coast views by the former are remarkable because those old artists were not given to landscape painting, which seems to belong more particularly to modern art.

* See the article on Florence in the Encyclopædia Britannica, Vol. IX, page 330.

Leaving the hall of Venus we enter the hall of Apollo; here the tutelary deities of Poetry and Art receive Cosmo guided by Virtue and Glory. In this hall is a Virgin and Child by Murillo; of course the Virgin mother is of the Spanish type of beauty, Murillo being a Spaniard. That is the characteristic of the old masters in delineating the Virgin and scenes in the life of our Saviour; the Italians painted Italian faces and figures, the Spaniards painted Spanish types, the Dutch that of their own countrymen; and sometimes the costumes are as incongruous as the faces, for they all represented Jews.

The chief attraction in the hall of Apollo is the portrait of Leo X. by Raphael. Leo X. was one of the most remarkable men of the Medici family; his face is a study. Its self poise, keenness, energy and refinement are all characteristic of this great man; great certainly, however opinion may differ as to his morality. He was the pope who put all Christendom under contribution by the sale of indulgences, in order to raise money for the completion of St. Peters at Rome, which roused the indignation of Martin Luther and was instrumental in bringing about the Reformation. In the hall of Mars, which comes after Apollo, the allegories on the wall allude to the success of Cosmo in war. Mars appears as the destroyer; there are battles on land and sea, then Victory followed by Peace and Abundance.

This apartment contains Raphael's celebrated Madonna della Seggiola, one of the loveliest of all the Madonnas. She is seen in side view, sitting in a low chair, holding the child on her knee; he leans on her bosom in a childlike attitude, while at her side St. John folds his little hands in prayer. She wears a many-colored handkerchief over her shoulders as was common among Italian women of the lower class. She appears as a beautiful, blooming woman with all the quietude of a serene nature, satisfied and happy. The child is plump and strong in form, with a serious trustful, wistful expression. The coloring is warm and exceedingly beautiful. It is said that while Raphael was watching a procession go by in Rome, he looked up and saw this woman and child at a window on the opposite side of the way, in exactly the attitude of the picture. He immediately sought something on which to sketch them, but all he could find was the top of a barrel lately deposited near the place at which he was standing; he made the sketch on this extemporized makeshift. The Madonna looks out of the picture as she looked out of the window; the picture in form is round as it was sketched on the barrel top. This special Madonna is familiar to us all, it being frequently copied and photographed, yet one never tires of seeing it.

In this hall is also a Holy Family by Andrea del Sarto, a portrait of Cardinal Guido Bentivoglio, who wrote the "History of the War in the Netherlands"*—a sharp contrast to the narrative supplied us by Motley. Here also is Judith by Allori. The head of Holofernes is a portrait of the artist, and Judith is said to be that of his mistress. She is a beautiful woman, splendidly attired, pale with the passion and crime of her cruel night's work. In spite of its grandeur as a work of art, the picture is revolting to the feelings, and one turns with relief from it to some pleasanter subject.

In the hall of Jupiter, Cosmo is represented as being led by Hercules and Fortune into the presence of Jupiter. Here is Salvator Rosa's picture of the "Catiline Conspiracy." It is the best of his pictures. The faces and figures are those familiar to us in Naples — the costumes are those of Rome. The excitable Neapolitan face just suits the characters and makes an ideal picture. "The Fates," by Michael Angelo, is characteristic of that artist, although it is said by some that he did not paint it. The three women in different pose, with different expressions, are all portraits of one old woman, who came to Michael Angelo while he was conducting the defense of Florence, and offered her son to fight for the city. A picture here by Leonardo da Vinci, a portrait of Genevra Benci is attractive for its decision, purity of modelling and drawing. The picture of St. Mark by Fra Bartelomeo is noted for its marvellous drapery.

In the hall of Saturn we see the last of Cosmo. He is here in mature life conducted by Mars and Prudence to receive the crown offered by Glory and Eternity. Although the application of these allegories is forced when we consider the

* *Della Guerra di Fiendra* (Flanders), 1633-39.

character of Cosmo, the allegories themselves are beautifully executed, adding much to the richness and splendor of the apartments. In the last-named hall we find Raphael's picture of Julius II, an old man of dignified mien, sitting in an armchair in deep meditation. His eyes are piercing, deeply set under a projecting forehead, the nose is Roman, the lips firmly compressed; all the features are mobile and lifelike. It is the splendid execution of a great master. There are three or four copies of this picture; one in the Museum at Berlin. Had we space one could go on describing the masterpieces in this collection indefinitely, but we must hasten to other things. There are five hundred pictures, all by distinguished artists. The first five apartments just considered are the most interesting from their elaborate frescoing as well as from their connection with Cosmo I.

The Boboli garden which rises to some height behind the Pitti Palace, forming a lovely background, was purchased by Eleanor, wife of Cosmo I., from the Boboli family, who had their residence there. This singular and unromantic cognomen is pronounced Bō′-bō-lē; it admits of no softening, refining or beautifying. The garden itself is fairyland. Fountains, flowers, statues, tiny lakes and islands, vary its beauty and loveliness. Avenues of clipped bay and ilex form walls of foliage. One of these avenues leads to the amphitheatre where once the charming and elegant ladies and courtiers of Cosmo's court took their recreation in the open air, under Italian skies, three hundred years ago. From the highest part of the garden a magnificent view of Florence and the surrounding country is obtained. From here may be seen the Apennines, whose base touches her walls; green valleys and hills covered with vineyards or olive plantations; every place is studded with palaces and villas through all the Arno winding towards the city and the sea.

The Medici family, which throws a glamour of romance, as well as of historic interest, around the Pitti Palace, was in the main a magnificent set of scoundrels. Handsome, learned, accomplished, ambitious and unscrupulous, they ministered only to their own glory, the advancement of their own family. Before the fifteenth century, the family became noted among the prosperous merchants of Florence, among whom their influence over affairs of state soon extended, while they carried on their mercantile trade till the fortune of the family grew to immense proportions. The most remarkable of the Medici were Cosmo or Cosimo, called *Pater Patriæ*, Leo X, and Catherine de' Medici, Queen of France.

Cosmo's character is a study; a shrewd and an acute man of business, a profound politician, far-seeing, broad, and liberal in mind, strong, self-controlled, often unscrupulous, yet generous, and with agreeable manners. He ruled the free republic of Florence without holding an office, or assuming a title, and established his family so firmly in power that they retained the reins of government for centuries after he died. Though the founder of the famous Medici, it was not from Cosmo that the grand dukes of Tuscany were descended, but from his brother Lorenzo, whose great-grandson, after the extinction of the elder branch of the family, inherited their wealth and power. This young man possessed some of the able qualities of his great-grand-uncle Cosmo. Only seventeen years old when he came into possession of his rich inheritance, he at once showed himself master of the situation, assumed the title of duke, and was called Cosmo I. Heretofore the family had ruled Florence without a title, like the first Cosmo. It was Duke Cosmo who, in 1554, bought of Luca Pitti's grandson, the Pitti Palace, which henceforth became the home of the Medici, till the extinction of the family in 1737. This is the Cosmo I. who is portrayed in the frescoes on the walls.

The history of Luca Pitti, who founded the palace and gave it his name, is full of interest. He was wealthy and popular when he commenced to build; all the citizens were anxious to aid him in his undertaking; but having engaged in a plot against Pietro Medici (son of him whom they called *Pater Patriæ*), and being unsuccessful, he lost his wealth and popularity. Luca accomplished one thing, however; he raised a well-nigh imperishable monument to his name. Humbert, the present king of Italy, uses the Pitti Palace as a residence, and many years ago when Queen Victoria visited Italy she was entertained there.

S. A. Neville.

STUDIES IN SCIENCE, ART, AND DISCOVERY:

THE LIMIT TO THE POWER OF THE TELESCOPE

THE telescope at the Paris Exposition will bring the image of the moon, as it were, within a mile of the earth.

It was formerly thought that the diameter of the object glass of a great telescope could not be increased beyond a certain number of inches without fatally diminishing its effectiveness. Object glasses rest on their edge, of course, and the weight of a very wide glass was so great that it increased the density of the lower part of its rim, on which its weight rested, and so modified the refraction of that part of the glass. Refraction is the bend, or change in its direction, which a ray of light undergoes upon passing through any denser body than the air.

Formerly object glasses were made very thick in the centre of their convexity, and so their focal distance, or the point at which all the rays passing through them crossed, was very near to the glass itself. The thicker an objective, the shorter the distance to where the focal point lies (back of it in the tube). With these thicker objectives and their short focus, very low power magnifying eye-pieces to telescopes were used — not over a 1000-diameter eye-piece to the largest instruments.

But lately Alvan Clark and the Jena manufacturers have employed very much thinner objectives. Such objectives produce a focal point much farther back from them in the tube of the telescope. And this change of focal point has given rise to the use of eye-pieces of 4000 or 5000 magnifying power. The nearer the object to be magnified is brought to an eye-piece, the higher must be its magnifying power.

And so the old limitations of size — diameter — in an objective, have been overcome. The objective of the Flower Observatory in the University of Pennsylvania is 18 inches in diameter; that at Princeton 20 inches; that at Harvard 24 inches; that at the University of Virginia 26 inches; that at the Lick Observatory 36 inches; that at Pulkowa, Russia, 38 inches; while the Yerkes objective is 40 inches in diameter. The glass which the Alvan Clark Company (Alvan and his son are now both dead) is now making at Cambridge for the Paris Exposition of 1900 is 51 inches in diameter. It is a thin convex with a long focal distance.

Objectives of telescopes are duplex, consisting of a convexity of crown glass fitted tightly into a one-sided concavity of flint glass. This arrangement is necessitated by the fact that rays of different colors have a different angle of refraction in passing through convex crown glass. But these color rays are intercepted by the flint glass backing, and so the focal point is preserved.

The glass of these objectives must be of equal clearness or opacity throughout. Alvan Clark told Professor George F. Barker, of the University of Pennsylvania (Physics), that the delicacy of his objectives was altogether owing to his care in going over them personally; and wherever he discovered a comparatively opaque spot, he would dip his finger tip in rouge powder and gently rub the spot back and forth for a minute — so exceedingly susceptible to this very slight friction are such highly finished and polished pieces of moulded glass.

The cost of great objectives is enormous. The Lick objective, which stands fourth in the list, cost $50,000. In making these objectives molten glass is poured into a pot. When the glass has cooled, the pot is chipped away from its mass, and, midway from the bottom, the crystal is sawed through twice — the section being a trifle thicker than the thickness of the centre of the objective. Out of this middle section the crown convex objective is made. The middle of the mould is most free from impurities and most uniform in density.

The tube of the Paris telescope will be 180 feet long. The image of the moon or planets is to be received upon a level mirror, 75 inches in diameter, and from that reflected on to a screen so rigged up that 600 people can view the wonderful revelations at one time. This Paris telescope, with its huge objective, will be peculiarly fitted to vivify and enlarge indistinct parts of large stars or planets or suns.

S. MILLINGTON MILLER, M. D.

THE ELEMENTS OF BOTANY*

A GREAT need is felt at present for outline lessons in the higher branches of study. Many young people who, for various reasons leave school soon after they have mastered the "Three R's," attempt, later in life, to further educate themselves. It is for such persons that outline lessons are indispensable. The ordinary text-books have indeed almost reached perfection, yet they do not meet the demands of the self-educating class. The object of this outline is to give, in as few words and in as simple language as possible, the elementary features of Botany, so that a person who is entirely unfamiliar with the science can at once take it up and practice it.

Botanical instruction should begin with Phanerogamous (flowering) plants, and begin with the flower itself. Cryptogamous (flowerless) plants may be studied later on. A typical flower has the following parts: namely, calyx, corolla, stamens, and pistil. Diagrams are invaluable in the study of the arrangement of the parts or the flower. To illustrate the cross-section of a flower, three circles are drawn, one within another. Suppose the flower to contain five of each of the component parts; namely, five sepals in the calyx, five petals in the corolla, five stamens, and five pistils. Separate the outer circle into five equal parts. Separate the next inner one in the same manner, making the parts alternate with those of the outer circle. Next divide the innermost circle into five equal parts, making them alternate with those of the second and fall opposite to those of the largest circle. Lastly, represent the five pistils in the centre of the smallest circle by placing five dots alternately with its parts.

This done, the names of the parts of the flower, represented by the diagram, should be thoroughly learned, thus: The outer circle, or floral envelope, is the calyx. Its parts are called sepals. The second circle, or envelope, is the corolla. It is composed of petals. The third circle is composed of stamens, the number of which is the same as that of the parts in either of the outer circles, or a multiple of that number. The last and innermost circle is composed of pistils. By applying these names to the corresponding parts of the natural flower, and repeatedly pointing them out in flowers with which one comes in contact, they are easily and indelibly stamped upon the memory. No analytical work should be attempted until this is accomplished.

All flowers do not possess *all* the parts above named. Those, however, which do, are known as *complete* flowers; those which do not, as *incomplete* flowers. Again, those which possess stamens and pistils, regardless of the other parts, are *perfect;* those which possess but one of these two organs, are *imperfect* flowers. If all parts in the same circle are alike in shape and size, the flower is *regular;* otherwise it is *irregular.* When there is an equal number of parts in each circle, the flower is *symmetrical;* when otherwise arranged it is *unsymmetrical.*

When the names and terms thus far given are thoroughly learned, the terms polypetalous, monopetalous and apetalous need little or no explanation. These are the three divisions of the exogenous class of Phanerogamous plants. A few words, however, may not be superfluous. The polypetalous division is that in which the flowers possess both floral envelopes; namely, calyx and corolla, the latter being composed of separate petals. In the monopetalous division, the calyx and corolla both are present, but the petals of the corolla are united. In the apetalous division, either the calyx or the corolla is wanting.

Attention may now be given to collection or harborization. Plants should be studied, as much as possible, when in the living state. To be complete, a botanical specimen should have root, stem, leaves and flowers. It is even better to select specimens containing bud, open flower, and fruit or seed-pod. To dry specimens successfully, place them carefully between soft dry papers of several thicknesses and apply as much pressure as possible without crushing the plants. These papers should be changed every day at first; later on, as the plants dry, they may remain several days. The same papers may be dried and used again.

The necessary implements for ana-

*See the extensive and elaborate article (illustrated), on Botany by Prof. Balfour, in the Encyclopædia Britannica, Vol. IV, pages 79–162.

lytical work are a microscope, a sharp knife, and dissecting needles. The needles can be made by fastening medium-sized sewing needles in holders of wood.

At this point it is absolutely necessary to take up some manual on Botany. This will usually contain a glossary, and an analytical key to the orders of all the plants described. In using the key one will come in contact with new words which can all be found clearly defined in the glossary. The key leads to the orders of plants where its work ends. Under the order will be found the genera, under the genera, the species. The order, genera, and species constitute the botanical name of the plant.

In the analysis of plants, the name should not be the end and aim. The plant should be thoroughly studied. Its most minute parts should be examined, counted and described before the analytical work is begun. As it is impossible to analyze flowers to any advantage without the use of a manual which contains the analytical key and all the orders of plants to which it leads, it would be useless to give the key in connection with this outline. But, supposing the reader to have before him a manual, it will be helpful to trace a flower through the key to its botanical name.

"Gray's New Lessons and Manual of Botany" is a comprehensive work and is extensively used. According to the key in this book the typical flower will be traced. The common flax is a good typical flower. The following is its analysis, preceded by the descriptive work above recommended. Thus, The flower is complete, *i. e.*, it has all its parts. It is perfect, *i. e.*, it has the essential organs: namely, stamens and pistil. It is regular having all parts in each circle alike in shape and size. It is polypetalous, having disconnected or separate petals. Now the key is used.

We find Series I to be Phanerogamous plants. It is with this series we have to deal. Under Series I is Class I, which is composed of dicotyledonous or exogenous plants. Class I suggests that it is not alone. Hence, before going further we must examine the other class. It consists of monocotyledonous or endogenous plants. The typical flower answers to Class I.

Under Class I come the three divisions, namely, polypetalous, monopetalous, and apetalous. Our flower answers to the first of these, namely, polypetalous. Under polypetalous the following arrangements of stamens is recorded, namely (*a*) stamens numerous, at least more than ten, and more than twice the number of sepals. (*b*) Stamens of the same number as sepals and opposite to them. (*c*) Stamens not more than twice as many as petals, when of just the same number of the petals, then alternate with them. The typical flower has five stamens, which are alternate with the petals, therefore it comes under the third (*c*) arrangement.

Under this arrangement of stamens we find another subdivision, namely, I, Calyx free from the ovary, *i. e.*, the ovary wholly superior. II. Calyx tube adherent to the ovary, at least to its lower half. In the typical flower the ovary is wholly superior, therefore it answers to the first of these subdivisions. This subdivision is further divided: I. Ovaries, two or more, and separate. II. Ovaries from two to five, united at the base, separate above. III. Ovaries, or lobes of the ovary, from three to five, with a common style. IV. Ovaries, only one. The typical flower comes under the last (IV). Under Division IV it comes further under its subdivision II; namely, Ovaries compound as shown by the number of cells, placentæ, or stigmas. It contains five pistils and five stigmas. Next the ovary is described, and the ovary of the typical flower answers to the second description; namely, Ovary two to several-celled. Under the description of the ovary are regular and irregular flowers. Following out the regular flower we find stamens more minutely regarded, and our flower falls under the following division, namely, Stamens just as many, or twice as many as petals. Further, it is an herb having perfect and symmetrical flowers. It has twice as many cells to the ovary (divided) as it has sepals.

This lengthy description leads to the order Linaceæ, page 104 in the same book. Having found the order, there is no further need of the key. The next step is to determine the genus. This is easy where there is but one, namely, Linum. The third and last step is to determine the species. In this case

there are four species. They are arranged in two sets, one in which the flowers are yellow, the other in which they are blue. The latter answers our purpose. This leaves no doubt, as there is but one species under this arrangement, that it is the one required. Hence the analysis is completed. Following is the result: Order — Linaceæ. Genus — Linum. Species — Usitatissimum. Common Name — Common Flax.

When giving the botanical name, the genus and species only are mentioned, thus: The flax in its botanical sense is called *Linum usitatissimum*. The analysis being completed, the full name, botanical and common, should be entered upon the botany sheet containing the corresponding pressed specimen. The regular herbarium paper has in the lower left-hand corner the words, Number, Date, Order, Genus, Species, Common Name, Locality, and Collected by. These are all to be filled in according to the analysis. Rules for fastening specimens to the sheets, and methods of preserving the same, are minutely given in the manual.

It will be observed that no mention is made, thus far, in the outline, of leaves, roots, stems, etc. The reason for this is that there is so much to be learned under each of these headings that a few words added here would not accomplish much towards helping a beginner. It will be better to read the chapter on each subject, as it is exhaustively treated in the manual. Then, too, experience in analytical work will bring out terms concerning these organs, and nothing is more helpful than to search for the meaning of the strange terms just as they are to be made use of. Having worked for some time with Phanerogamous plants the young botanist will have no difficulty in taking up Cryptogamous plants. This series treats of ferns, mosses, seaweeds, fungi, etc.

Besides the usual collection of plants of both series, it is advisable to make a collection of leaves, mount them and record their names. Another interesting engagement is to plant a quantity of seed, take one up each week and describe it. Continue this until seed is produced. This constitutes what is known in Botany as plant history.

Botany in its fulness, is an extensive study, therefore very little can be given in a few pages, yet if followed closely, this outline will prove a starting-point to the work which can be carried on indefinitely.

ANNA M. GRIMM.

THE WORLD'S LONGEST REIGNS

THE recent celebration of the longest reign in English history suggests a brief enumeration of those which, for the same reason, have been noteworthy in other countries. It has been computed, writes a correspondent of the London "Times," that the ordinary length of an English sovereign's reign is about twenty-three years. Her Britannic Majesty's rule has far exceeded this average, the English sovereign who came nearest to Queen Victoria in length of reign having been George III., who succeeded his grandfather, George II. on October 25, 1760, and died on January 29, 1820.

From an early period most nations would seem to have prided themselves on the length of their sovereignties, traditionary history oftentimes magnifying these to a fabulous extent, as in the case of the ancient Chaldean dynasty. And glancing at Persia we find it recorded in the annals of the Pashdadian race how a certain Feridoon reigned 500 years. But, apart from legendary lore, one feature of the Asiatic sovereignties has been their want of permanency, and if some one of the dynasties established in Persia since the time of Alexander endured for a rather lengthened period, the individual sovereigns only too frequently fell by violence.

The early records of China, again, magnify the length of their rulers' reigns, a certain Emperor Hwang-te having, it is said, reigned a century, from B. C. 2697–2597; he was followed by Chwan Hu, who occupied the throne for 78 years, and the latter was succeeded by the Emperor Yaou, who held sway from B. C. 2356–2255. But, coming to a more recent and authentic period, it may

be noted that of 22 dynasties which have governed China, each one has generally done so by rebellion.

The vicissitudes of the Eastern Empire were equally striking, one ruler following another in quick succession. Of the longest reigns may be mentioned that of Theodosius II., which lasted 42 years, from 408–450, the chief event being his victories over the Persians. He was succeeded by his sister Pulcheria — the first reigning female sovereign in the Roman Empire — who shared the throne with Marcian, her nominal husband. The reign of Justinian and his celebrated consort, Theodora, was nearly 39 years, and that of Heraclius 31 years.

The reigns of the Turkish Sultans have been short. Mahomed II., who took Constantinople in 1453, and made of the Turks a European Power, was the seventh sovereign in descent from Othman, the great chief who conquered Prusa and founded a dynasty in 1299. He reigned just 28 years, and was followed by Bajazet II., who deserves to be remembered as the founder of the Turkish navy. In the year 1520, Solyman the Magnificent, the contemporary of Charles V., Henry VIII., and Francis I., ascended the throne, which he held for 46 years, some of the great exploits of his reign being the reduction of Belgrave, the conquest of Rhodes, and many important victories both in Asia and Europe. And it is noteworthy that Solyman was the only Sultan, from the time of Othman to the present representative of the Royal line, who reigned for a longer period than 40 years. In 1808, after the deposition and murder of Mustapha IV., Mahmud II. succeeded to the throne, which was occupied in 1839 by his son Abdul-Medjid, who retained it till his death in 1861.

Amongst the longest Russian reigns may be mentioned that of Ivan IV. — one of the ablest sovereigns — who reigned 51 years, from 1533 to 1584. In spite of his intemperance and cruelty, he was a great patron of the fine arts, introduced printing into Russia, and encouraged religious toleration. Michael Feodorovitz, of the house of Romanoff, reigned 32 years, from 1613–1645, and was succeeded by his son Alexis — styled the father of his country — who held the throne 31 years. Peter the Great reigned 36 years, from 1689–1725, and was the first of the Tsars who assumed the title of Emperor, his consort Catherine reigning two years after his decease. On the deposition of Ivan VI. in 1740 Elizabeth, daughter of Peter the Great, seized the crown, which she held for 21 years, and the deposition and murder of Peter III. raised his consort Catherine II. to the throne, a position which she retained for 34 years, during which period she increased the Russian territories on all sides. In 1825 Nicholas I. succeeded to the throne, his reign extending 30 years to March 2, 1855.

The Crown of Poland seems to have been no enviable possession, for it was the boast of the Polish nobility that they held their kings, and were not holden by them. Boleslas I., surnamed the Lionhearted, was the first King, which title he obtained from Otho III., Emperor of Germany, his reign lasting about 26 years. Bolelas III. reigned 36 years, from 1102–1138, and Boleslas V. about 52 years. Casimir the Great, whose reign was noted for the encouragement given to the arts, and improvements in the law, held the throne for a lengthened period of 37 years; and Sigismund I. reigned for 42 years, from 1506–1548. On the death of Augustus III., in 1763, the influence of Catherine, the Tsarina, carried Stanislaus Poniatowski to the Polish throne, and he was crowned in the following year. But after reigning 31 years he was deposed in 1795, and died at St. Petersburg, a State prisoner in 1798 — the last of the Kings of Poland.

In the royal roll of Danish sovereigns we find Gormo the Old, reigning 53 years, and Waldemar II., surnamed the Victorious, from 1202–1241. But it was in the 16th century that Denmark had good reason to be proud of its sovereign, for the brave and clever Christian IV. reigned for 60 years (1588–1648), the defender of the reformed religion. He was succeeded by Frederick III., who changed the Constitution from an elective to an hereditary Monarchy. And coming down to the close of the 17th century Frederick IV. held the Crown 31 years (1699–1730), whereas the present King of Denmark has reigned since 1863.

Turning to Sweden, it was in 1523 that Gustavus Vasa repealed the Union, and ascended the throne, being succeeded after a reign of 37 years by his son Eric,

who in a very brief time was deposed and murdered. And of the 17th century sovereigns, Gustavus II., who ascended the throne in 1611, and was slain at the battle of Lutzen, November 16, 1632, was the most important. In the last century the luckless reign of Frederick of Holstein lasted from 1751–1771, and a pistol shot from Ankerström, fired at a masked ball, ended the career of Gustavus III., in 1792 after a reign of 21 years. And, coming down to the present time, Charles XIV. reigned from 1818 to 1844, and the present King of Sweden has reigned 25 years.

The roll of the sovereigns of France affords several notable instances of long reigns. Henry I. held the throne 29 years, and Louis the Young, whose divorced wife married Henry II. of England, reigned 43 years, being succeeded by Philip Augustus, whose reign extended to the same length. Louis IX. was king 44 years, and Charles VI., who died a maniac, ascended the throne in 1380 and died in 1422. Of the House of Bourbon, Louis XIII. reigned 33 years, Louis XIV. the long span of 72 years, and Louis XV. 59 years; his grandson, Louis XVI., within 20 years from his coronation, suffered a violent death.

The annals of the German Empire, although they record a long and varied list of rulers, cannot boast of any exceptionally lengthened reigns. Frederick I. reigned 38 years, from 1152–1190, and Frederick the Pacific 53 years; while Charles V., after six-and-thirty years of rule, laid down his sceptre and retired to a monastery among the Spanish mountains. Leopold I. held the throne for 47 years, and Frederick William, known as the "Great Elector," for 48 years, which was two years longer than Frederick the Great reigned. It was on August 11, 1804, that Francis II., resigning the empire of Germany, became Hereditary Emperor of Austria, reigning 31 years, and being succeeded in 1835 by his son Ferdinand who, in 1848, abdicated in favor of his nephew, Francis Joseph, who up to the present time has held the throne 49 years. The succession of the Hungarian kings from the time of Stephen to that of Ferdinand I., who became Emperor of Germany, comprised amongst the longest reigns that of Stephen, who reigned 41 years. It was this sovereign who established the Roman Catholic religion, and received from the Pope the title of apostolic king, still borne by the Emperor of Austria, as King of Hungary. Louis the Great, who was elected King of Poland in 1370, sat on the throne for 40 years; and Sigismund alone on the death of Mary ruled 45 years.

Bohemia was governed by Dukes till Ottocar assumed the title of King in 1198, reigning 32 years. In 1310, John of Luxembourg, who was killed at the battle of Crecy, ascended the throne, which he held 36 years; and the reign of Ladislas VI. lasted 45 years, from 1471–1516, the country in 1526 being united to Austria under Ferdinand I. Bavaria was originally governed by dukes subject to the French monarchs, and amongst those who could boast of the longest reigns were Louis, who ruled 48 years, from 1183–1231; Louis III., 53 years (1294–1347); William I., 42 years; and Maximilian the Great — the first Elector of Bavaria — 55 years (1596–1651). Of the kings of Bavaria, since it was made a constitutional monarchy in 1818, whose reigns have been the longest, may be mentioned Louis I., who held the throne 23 years, and Louis II., who reigned from 1864–1886. As a constitutional monarchy founded in 1831, Belgium's first king, Leopold, reigned 34 years, and on his death he was succeeded by his son, who up to the present time has reigned over 31 years.

In 1512 Ferdinand V. united the various crowns of Spain, and in 1516 was succeeded by Charles I. who reigned 40 years, being followed on his abdication by Philip II., whose reign lasted 42 years. Philip IV. held the throne for 44 years, and in 1700 Philip V., grandson of Louis XIV. of France, succeeded Charles II., and hence arose the "War of the Succession," which was terminated in 1713 by the Treaty of Utrecht. In 1724 the resignation of Philip was announced, but after a few months he reascended the throne, which he held till 1746 — a period of 46 years from the time he first ascended it. And the next and last longest reign was that of Isabella II., who was declared queen 1833 (born October 10, 1830) and reigned 37 years, abdicating in 1870 in favor of her son, Alfonso.

After defeating the Moors on the plains of Ourique in 1139, Alfonso I. was declared King of Portugal, and reigned 46

years; the next longest reign being that of Denis or Dionysius, who sat on the throne for the same period. John I., who married Philippa, daughter of John Gaunt, reigned 48 years; and, in 1580, on the death of the Cardinal-King, Philip II. of Spain united Portugal to his other dominions, and held the throne for 18 years.

The modern kings of Italy date from 1805, when Napoleon was proclaimed sovereign and crowned at Milan, but he abdicated in 1814, and was succeeded in 1861 by Victor Emmanuel II. of Sardinia, who reigned 17 years. On his death in 1878 the present King Humbert ascended the throne, having reigned 19 years. And with reference to Sardinia, it may be noted that it was in 1720 that Victor Amadeus, Duke of Savoy, acquired it with the title of King, his son Charles Emmanuel I. reigning 43 years, the other reigns being comparatively short. If we pass to Greece, Otho of Bavaria was made king by a convention signed May 7, 1832, and reigned 31 years, being succeeded in 1863 by George I., son of Christian IX. of Denmark, the present sovereign, who has thus been on the throne 34 years.

If we turn once more to England, it is noteworthy that, prior to George III., the only sovereigns whose reigns lasted as long as 50 years, were Henry III., who ruled 56 years, and Edward III., who sat on the throne from 1327–1377. Henry VI. reigned 39 years and Elizabeth 45 years. But, as has been pointed out, since James II. died on September 6, 1701, and the Prince of Wales — James Francis Edward — on January 1, 1766, the length of the latter's reign, if he had become King of England, would have been over 64 years.

THE GRECO-TURKISH WAR AS SEEN BY AN EYE-WITNESS

TRUTH is a winged goddess and most illusory in Greece. Her lamp, if she ever had one, has long ago been put out and her shrines broken. This I say with qualifications as to Macedonia and part of the Peloponnesus, but I make no reservation for Thessaly, the cradle of Hellas. In the course of the centuries its lakes and marshes have been abated, but it is still a land of mists in more senses than one. For reproach, the Athenians and their neighbors dub the Thessalians "Austrians." It is a pity that these self-styled "Hellenes" of the mainland have not some modicum of Austrian truthfulness, industry, and courage in their composition. Doubtless the Thessalians deserve the contempt of any virile race, but there is neither force nor helpfulness in the Athenian kettle calling the Thessalian pot black.

Although the notoriety of the Greek character for subtle insincerity has spread west as well as east, says a writer in the current number of the "Fortnightly Review," from whose paper this condensation has been made, few know how much it is deserved. In a wide and varied experience I have never known a people whose public affairs and business intercourse were so flagrantly conducted upon a basis of systematised delusion. The races that to-day inhabit Hellas, speaking generally, have all the faults and few of the good qualities of the old Greeks. Their chicanery, as much as their inveterate indolence, has cramped the commerce and retarded the progress of the country. English merchants and traders declare that it is almost impossible to do business with the Greeks, so corrupt is the administration of the Customs and so frail is the commercial morality of the people.

All this, it may be said, is but the aftergrowth of weeds sown in ages of foreign domination. Yet Servia and Bulgaria, which suffered in like manner, are not cursed in such fashion. With few, if any, exceptions, the foreign journalists who recently proceeded to Greece were at the outset favorably disposed to the Greek cause. The plausible Greek, however, got found out, and those who wished to bless, found that truth required that they should ban. It was not only that they detested the utter incompetence, vaporing, and cowardice of the great majority of the Greek officers; or

that they saw that the army was without organization, and the whole official class astoundingly unscrupulous; but that the ordinary native, even with the land in direst stress of war, neglected no opportunity to trick and cheat. Preferably, strangers were his prey. That many of them were volunteers come to give of their means and fight for Greece made no difference. The indictment is black, but nevertheless, if needs be, it is capable of proof.

Nor is half told of the causes which provoke the disgust of foreigners. The small meannesses of a people may be overlooked, but the callous treatment of volunteers, the cowardly abandonment of women and children and wounded on repeated occasions to the enemy, deserve to be recalled against the Greeks, and particularly their military chiefs. To maltreat prisoners, leading them haltered and bound with ropes through the streets, to alter and destroy letters and telegrams, so that only garbled and false information should get abroad, are practices not commonly employed by the officials of civilized governments. Yet these things were frequently done before and during the War. The Turk is, individually, an honest companionable fellow, but taken collectively, either because of his Government or his creed, he is detestable. After this I am not likely, I hope, to be accused of flattering the Greeks. As between Greek and Turkish rule it is a choice of evils. But I confess, if I had to elect my citizenship for either, it would nevertheless be for the nominal Christian government. Of course, there are Greeks who are honest, brave, truthful and generous, but they are in depressing minority. And then many of them are Macedonian Greeks or Albanians. Still a few just men saved Nineveh. Will the few upright Greeks be able to save their fair land?

There are four things that stand out beyond all else in connection with the Greek War:

First, That the king made the war and was not forced into it for dynastic reasons.

Second, That the Greeks could have won and taken Macedonia and Epirus had things been better managed.

Third, That the Turk, nizam or irregular, is but an indifferently good soldier, at any rate in attack.

Fourth, That Greece, under a proper financial administration, could pay her debts and a reasonable war indemnity besides, without the addition of a penny to the existing taxes.

I am well aware that these views are quite contrary to the general preconceived opinions formed in this country. At one time, not long ago, I would have scoffed at these statements, but these conclusions, bit by bit, shaped themselves in my mind as the panorama of events unfolded before me during my sojourn in Greece.

When I arrived in Athens early in March last, although the Cretan insurrection was being openly supported by Greek arms, war had not been declared against Turkey. It was what I think was once described in Parliament as "a condition of war," but not war. How had it come about? A recurrent period of fostered unrest in Crete and the Armenian massacres had put Turkey in the European black books. Here was a chance for a Grecian game of "bluff," or brag and intrigue. An acquisition of territory would increase the borrowing, possibly the political potentiality, of Greece. The Greeks had a fleet, the Turks had none of any value that made for security; and then was there not always sympathetic Europe ready to intervene if the worst came to the worst? For a time the Premier, M. Delyannis, and his colleagues readily supported King George in his inception and play of the game of "bluff" as against the European Powers.

Up to a certain stage the game looked safe, but when the King one day proposed that they should take a step from which there was no safe retreat for him or the Ministry, M. Delyannis declined to do so before consulting his colleagues and the Chamber of Deputies. Subsequently King George sent again for the Premier, who was notoriously averse from war, and told him that troops must be sent at once to Crete. Again the Premier demurred, and the King thereupon said, "I have taken it upon myself to order them to go. They will start within two hours. Everything is ready." M. Delyannis, who at that time told the story to an old English friend of his, said that he at first stoutly protested, but believing the King had received some private assurances from one or other of the Great Powers, he

acquiesced. The expedition sailed, and the King and M. Delyannis acquired a sudden access of popularity, for the Greeks went mad with jubilant excitement. Hysteria is catching, and others besides Greeks began hallooing and crying that Greece should have Crete, Epirus, and Macedonia, without waiting to consider whether she could administer those States.

The Great Powers, however, displayed no haste to accede to Greek methods or demands for the incorporation of Crete. King George and his advisers rashly decided to attempt to hasten matters in their own fashion. Agitation was begun without and within the Turkish frontier, and the *Ethnike Hetairia* manufactured alarms and disturbances in Macedonia and Epirus. Attempts were made in other directions, but though money and emissaries were sent, nothing came of it. Meanwhile the mobilization of the Greek army was begun, and later on reserves were called out. Knowing a good deal about the relative condition of preparedness for war of both Turkey and Greece, I spoke without reserve on the subject to the King and, later on, to the Princes. I told them nearly every military intelligence department in Europe knew that Turkey had been getting her troops ready for a year past to deal with insurrection or invasion along the Macedonian frontier.

Within the Salonica military district she had nearly one hundred thousand men under arms, all well-trained and passably equipped. Besides infantry she had nearly ten thousand cavalry, and within a month could place a further force of seventy thousand infantry in the field. Against these the Greeks could not bring more than sixty thousand regulars. There no doubt might be mustered twice that number of men, but they would be untrained irregulars and volunteers who would take a month at least before they could be of much use, and Turkey would have her bands of irregulars out also to offset their value. It was notorious besides that the Greek army was indifferently organized, that it had no transport, no commissariat department, no medical department, and was without anything like a sufficiency of trained officers.

I may state here that the Greek army was nominally about eighty thousand strong. For ten years the annual conscript draft should have produced between twenty-four and twenty-six thousand recruits. Only about sixteen thousand, however, were annually mustered in, and these were drilled in a slovenly fashion. Prepared or not, the Greeks clamored for war, never doubting latterly but that they would win. We were told that the Greeks scattered throughout the Turkish empire would spring to arms and paralyze the enemy's hands. There were to be fearful outbreaks in Macedonia, Epirus, and Albania, and tumults and burnings in all the chief cities under Turkish rule where Greeks dwelt — Smyrna, Constantinople, Salonica, and so on. I was informed that insurrectionary bands were being got ready to invade Macedonia and Epirus, and I was introduced to several of the leaders of these new expeditions. As I saw war was inevitable, I left Athens, and, going to Thessaly, made frequent excursions along the frontier from Olympus to Metsova.

Weeks before war was declared the Greek officials, civil and military, armed, equipped, and "stiffened" with detachments of Evzoni, their best troops, the various insurrectionary bands that were to invade Turkish territory. I saw many of these Greek filibusters at Kalabaka and other places. By order from Athens the local commandants supplied them with stores, transport, and trenching tools, and sent guides to direct them, so that they should slip across into Macedonia at the most suitable points for conducting their operations. Later on I saw and spoke with many of the Italian volunteers on their return from the incursion to Baltino. Most of them were highly incensed at what they said was the cowardice and incompetence of the Greek officers who accompanied them. They accused the native irregulars of pillaging, burning dwellings, and barbarous doing to death of wounded Turkish soldiers.

The Greeks had a fairly long innings carrying on the war within Turkish territory, whilst disingenuously disclaiming responsibility for the acts of their own levies. Finally, in April, the Sultan declared war and set his forces in motion. Prior to that date the Greeks had moved up the whole of their available strength close to the Thessalian frontier. The army numbered nearer fifty than sixty thousand, of all ranks. They had dis-

creetly strengthened all their outposts, and stationed reserves near the chief passes, from Melouna to Koutra. It should be remembered that the Greeks were upon the Thessalian plain, where the moving of troops to and fro and upon interior lines presented no serious difficulty. The Turks, on the other hand, were so situated that they had to begin operations rather cribbed in the hilly country of Macedonia, where it is broken up into numberless small valleys. They had no railroad anywhere near the front for the transport of war material, or for sending back their sick and wounded. Edhem Pasha had his troops distributed in relatively small bodies along the whole frontier. It was a source of weakness and could only have been justified as a precaution against raids. But it offered a tempting opportunity for the destruction in detail of the Turkish army in Macedonia. His chief camp and headquarters was Elassona, a few miles north of Melouna pass, where early in April he had about 25,000 men scattered about the valley.

I am dealing in this article with Thessaly only, though much of what appears equally affects Epirus. As will have been gathered, the Turks were without any but long and weak lines to maintain their communications. Long before the war commenced the use even of the sea to curtail distances was denied them by the Greek fleet. Salonica, which was their real base of supplies before and during hostilities, was open to attack and capture by any bold admiral. Its seizure or the landing of an expedition upon the coast near it would have meant the cutting of the Turkish lines, or, at any rate, the necessary weakening of his available force to protect the point, and in the end possibly Edhem's withdrawal from the frontier.

Whilst General Macrise kept his division about 35,000 strong between Larissa and the frontier town of Turnavo he could threaten the enemy at passes a score of miles apart. He might even by a flank movement hurry them through the vale of Tempe and been upon Turkish territory under the eastern slopes of Olympus, supported by the fleet, before Edhem had stirred from Elassona. The safety of Larissa and much of Thessaly would have been temporarily secured by roughly damming the brawling Peneios river with trees and rocks. Part of the country would have been put under water, and the bridging of the river would have been difficult for the Turks. A score of things could and should have been done that were left undone. War with the Turk has been, according to the Greek, that which he desired beyond all else. Yet they made no adequate preparation for the contingency they provoked, but plunged into the campaign without an intelligence department, without maps, without field-glasses, without sufficient provision for signalling, and with the most incompetent body of officers that ever troops had set over them.

In my experience rank and file are much alike in fighting quality the world over amongst Caucasians. It is the training and the officers that make the difference as to the relative value of troops in action. To look at, the Greek officers seemed well enough, until the Turkish shells and bullets began to fly about. There were some, however, who, though knowing their danger, and devoutly crossing themselves as every hurtling shell burst near, yet stood their ground and did their work right bravely. But the majority were not of that cast.

Before war was declared the Crown Prince Constantine arrived in Larissa, and took over the command of the Greek army in Thessaly. Prince Constantine is a tall, fair young man of about thirty years, with mild blue eyes and a Danish cast of features. He had no military experience; and, as events disclosed, was neither of a martial disposition nor of a firm temperament. He showed subsequently that he felt keenly his false position, and he tried to excuse the awful failures made in the conduct of the campaign of panic and flight. On the arrival of Prince Constantine General Macrise was appointed Chief of Staff. Nicolas Macrise, or Nikolaoz Makriz, had seen fighting in previous Greek wars. He is a tall, elderly man, well over sixty, of spare, active figure, with genial flashing dark eyes. In manner he is unreserved and frank. His features are strongly marked, and the big, slightly pendulous, always rubicund nose is of a type often seen on the faces of good soldiers. Macrise is always tranquil, even when the action is not going as he would wish. Many a chat have I enjoyed with the old General, who was always the same cheer-

ful, wary, and resolute leader. On only two occasions did I observe him show signs of vexation; one was when the retirement was ordered from the frontier, and the other at Mati, when the Turks tried to turn his right.

General Mavromichali, who comes of a famous Morean family, stands over six feet high, and is about sixty years of age. He is one of the old school of disciplinarians, and sets an example to his officers and men by appearing always well groomed and punctilious in the discharge of every routine of duty. He gave the cavalry regiment attached to his command plenty of work, and made a very serviceable body of men out of them quite early in the war. General Mavromichali, however, was properly reputed more as a fire-eater than an able leader. He certainly was inferior to General Macrise in tactical skill and the knowledge of his profession. Much of the success that attended the earlier handling of the Greek artillery at Mati was due to the disposition of the batteries and the personal supervision of Colonel Zaphiropoulos, whilom chief of staff to General Macrise.

General Smolensky, or Smolenitz, for he changed his name because his brother whilst in the government did something he regarded as dishonorable, is a stout, well-built man of forty-five years. By birth and descent he is a Macedonian. He first became prominent by his obstinate defense of Ravenni with seven weak battalions against the Turks. What made the incident more remarkable was that it occurred after the flight of the Greek army from Mati and Turnavo, when he was without supports to right or left. He declined to leave without orders or until he was beaten in action. Strangely enough he succeeded in withdrawing his small force from under the eyes of the whole of Edhem's army.

With war getting nearer each day neither General Macrise nor the Crown Prince manifested any real interest in preparing for it. Roads and bridges were not quickly repaired. The construction of defensive works in Larissa was carried on in a half-hearted manner and they were never completed. No effort was made to hold the Turks in check in case of disaster, by means of field works which could have been thrown up and armed at various points covering Larissa. The Crown Prince rejected plans of campaign put before him by his generals, adopting instead the suggestions of his personal favorites. He spent most of his hours in his palace at Larissa, and I am not sure that he once closely inspected the frontier.

Independence Day having passed without a general invasion of Macedonia by the Greeks, it is likely that the Turks had thought the danger over, when suddenly firing began in a night along the frontier from Nezeros to Ravenni. For a day or two the Greeks carried all before them, capturing many block-houses and taking a number of prisoners. They succeeded in penetrating Turkish territory in some places for two or three miles. Everywhere they were doing splendidly, far better than I anticipated. The Turks were in immediate danger of being outflanked in one part of the field of operations, and separated from their main force at Elassona. It was midday, the 19th of April, when at a critical moment for the safety of a portion of Edhem's forces an order arrived from the Crown Prince to cease firing and retire the whole Greek army back upon their own side of the frontier. Whether the order came as an instruction from Athens makes little difference. The mischief was done, and the Greek soldiers were furious at being stopped. General Macrise sent asking for explanations, and begging to have the order rescinded at once. After an interval of three hours, during which there was little or no firing, a message arrived from headquarters that a blunder had been made, and the army was to readvance and engage the enemy. It was a lost opportunity, for the Turks followed up the Greeks and reoccupied the lines from which they had been driven. The cost of the blunder was a serious one to the Greeks, for in a futile attempt, on the following day, to retake Gresovala, General Mavromichali lost two thousand men. His army had been drawn in to co-operate more directly with Macrise's division.

On the 21st of April, without any of the pictorial display or reputed hand-to-hand fighting, some forty thousand Turks, not less, accompanied by three cavalry regiments and half a score of batteries, quietly streamed down the zigzag paved way in the steep Melouna pass into Thessaly. They occupied the village of

Legaria and positions among the lowest foot-hills at the outlet of the pass. The Greeks were not able to embarrass them as they deployed, although an attempt was made to find the range with artillery. Holding tight grip on the frontier hills upon their left, the Greek army extended to the right, occupying the Matirock and old Roman baths in strength. Their extreme right stretched for two miles in a semicircle, and rested upon the village of Mesalaria, under the hill-ranges that run east to Tempe. Thus were the Turks held, as it were, in a gateway, unable to come out upon the Thessalian plain. For two days there was a fierce artillery duel, interspersed occasionally with sharp rifle fire as the infantry became engaged on the right and left of the line. Once or twice the enemy tempted fortune by trying to pierce the centre at Mati, but the attacks were easily repulsed by the Evzoni and a brigade of regulars. During a lull in the battle I saw the Crown Prince ride up to a battery, where he remained two minutes; so he was certainly technically under fire during the war. Neither on the Wednesday nor run-away Thursday did the Turks have the best of the fighting. It was the other way, for though the enemy gained ground at Mesalaria and upon their left, they were each day driven in. All had ended in favor of the Greeks when the sun set on the 22nd April, and the battle of Mati was over.

It was that same night that the Crown Prince ordered the army to retreat upon Larissa, twenty-five miles distant by road. About 8 P. M. the men were roused from their first sleep and commanded to fall in. They did so very orderly and quietly, thinking that it was intended to deliver a surprise attack upon the Turks. The whole army was on the march, and had got five or six miles from the battlefield, or close to Turnavos, when the unaccountable mad panic seized them. Some say it originated one way, some another. Cavalry and artillery, to escape from an imaginary danger, charged through their own infantry and galloped towards Larissa. The army broke into pieces and became a furious rabble, which fled by road and fields south as hard as most could run. Arms and ammunition and baggage were cast aside wholesale. The Greek officers, as a rule, behaved worse than the men, for they led the fleeing mob, and many of them never stopped until they reached Pharsala or Volo. The whilom Greek army was a mob convinced that the Turkish cavalry was upon their heels, though it never was near them. It gave them the strength of despair, and so they covered afoot fifty to sixty miles within twenty-four hours. The inhabitants of Larissa and all the surrounding country, terrified at the sudden calamity, were left by the military and civic authorities, without hint or warning, to shift for themselves.

There were divided counsels that terrible night and morning in the Crown Prince's Palace in Larissa, to which he had retired as usual. Contradictory orders were sent out one after the other. The English nurses, in whose safety I and others were naturally interested, received conflicting official instructions what to do and where to betake themselves. At 5 A. M. the Crown Prince slipped quietly off to the railway station, and got aboard a special train which steamed off to Pharsala *via* Velestino. The English nurses managed to go by the same train as far as Velestino, whence they went to Volo. Thousands of helpless creatures, together with sick and wounded soldiers, were left around the railway station, whilst officers rode off upon the early or later special trains, to fly, as some of them did, as far as Athens. The Turks were at a loss to comprehend the disappearance of the Greeks and feared a trap, so they did not pursue the Crown Prince nor his army. General Smolensky, who was probably forgotten by the headquarters' staff, held on fighting at Boorassi, near Turnavos, until the afternoon, when he slowly retired upon Larissa and thence towards Pharsala.

Incidentally it has been shown that Turks and Greeks displayed little initiative in action, and were slow to take advantage of each other's mistakes—the want of dash or making most of opportunity was the conspicuous fault on either side. Whilst on his way to Pharsala, General Smolensky was directed to hold Velestino, an important point, for there the Volo, Larissa, Pharsala, Kalabaka line branches north and west. For fully three days the army in Pharsala remained in an utterly disorganized state,

no one trying to evolve order out of that chaos. The Crown Prince had his new headquarters in Pharsala, where he kept close indoors. Perceiving there was not much likelihood of the Prince's army doing any serious fighting, I decided to follow the fortunes of Smolensky's force then encamped around Velestino. Pharsala was readily accessible by train, so I ran up occasionally to see how the troops fared.

The arrival of the Greek fleet in Volo waters comforted the distracted Thessalians greatly, and gave a little courage to the fugitive Greek officers, who finding the railway open and safe, began to slink back to search after their lost commands. Why the Greek fleet did so little has always been more or less of a puzzle. From a British officer I heard that the old Admiral had been unable to get his orders obeyed for an operation near Salonica. On that occasion he told Prince George that, as there was a manifest disinclination on His Highness's part to carry out the orders, it would be better to retire and let the second in command execute them. That was a proposition which the Prince would not accept, and so next to nothing was done by the really powerful Greek ships. Edhem and Osman Pashas appeared before Velestino on the 30th April with a force of at least thirty thousand men of all arms. They lost no time in coming into action. Rizumnylon, a little village two or three miles due north of Velestino, was seized and, as usual, fired in part. Then they vigorously assailed Smolensky's centre, whilst a detached force, numbering about five thousand, came up and endeavored to turn the Greeks' leaders right by scaling the hills round by Pilaf Tepé. Smolensky who, of regulars and irregulars, had got together nearly ten thousand men, clung to his ground, from which they failed to dislodge him. There were heavy losses that day on both sides.

Meanwhile, two thousand Turkish Albanians, advancing under cover of cavalry and guns, got a firm footing upon the lofty ranges north of Pilaf Tepé where there were only a few Evzoni with a battalion of regulars in reserve to oppose them. Luckily a hundred or two Italian and other irregulars came up from Volo and went out along the hills to help in opposing them. The Turks, however, by dint of numbers and with considerable courage forced their way to within thirty paces of the top of the main ridge. Running from bush to bush and piling a few stones for protection in front was how they succeeded with comparatively little loss in all but closing with the two companies of Evzoni who held the crest behind low walls of loose stones. The Greek highlanders did not run, and being good marksmen, the Turks hesitated to charge or show themselves more than they could help. In the end, after several hours' heavy firing, either the Turkish ammunition gave out, or, as I think, the Greek irregulars with a battalion which was sent forward threatened their line of retreat, and so the Albanians bolted back downhill much faster than they ascended.

The escaping Turkish remnant were shelled by the Greek battery in the low ground as they ran in all directions from the hills back to their cavalry. Had Smolensky been able to follow the Turks up that day, he might have sent them into Larissa before morning. In vain he despatched telegram after telegram to the Crown Prince at Pharsala to send him reinforcements by train, as the Turks could have been trapped and half of them cut off. The Turks subsequently admitted to me that they should have had to abandon their guns and would have lost many prisoners had they been followed up, as their men were tired out and their ammunition was exhausted. No response was vouchsafed by the Crown Prince, and the enemy, instead of being pursued and harassed as they feared would be the case, were able to retreat in good order.

When the battle was over and won and all was quiet, the Turks having retired to Gherli, General Smolensky, at 8 P. M., wired once more to the Crown Prince, asking for orders and for leave to advance against the enemy. At 4 A. M. next morning he received a brief wire from Pharsala from the Crown Prince, saying substantially, "I withdraw this evening (the day of Smolensky's battle) with the army to Domoko; rejoin there immediately." This was the absolute abandonment of all Thessaly to the enemy. As subsequently appeared, the Crown Prince, quite unnecessarily, let locomotives and guns again fall into the hands of the Turks. The siege train of long Krupps

at Larissa were left behind without an attempt to haul them off, although the carriages and limbers were in perfect order.

The telegram General Smolensky got at 4 A. M. was the last he had for several days thereafter from the Crown Prince. He was astounded, nay, furious, at the news of a second flight without a battle or a defeat. "The Prince's men," said he, "are the same as mine. They can win battles against the Turks if some one will lead them." Had the Prince been seen that day in flight again by the regulars and irregulars with Smolensky, many more rifles would have been discharged at the fugitive officers than were fired at the trains which conveyed the headquarters on the "runaway" day from Larissa. The Turks came out that day from Gherli in much force at 5 A. M., and wheeling their right round Smolensky's left, essayed once more to drive him out of Velestino. Without flurry the Greek leader had made his dispositions before they appeared. All the reserve ammunition was sent back to Almyros, and most of the sick and wounded into Volo. It was wonderful how slowly the Turks gained ground considering the number opposed to them. Four or five of the enemy's batteries shelled a poor little battery-and-half of Greeks, who only replied at intervals.

By 3 P. M. General Smolensky's left had been quietly withdrawn three miles and placed in position upon a new line facing westward. The Turks burned more powder until 5 P. M., but did not succeed in taking Velestino that night, for the centre and right remained in their lines, and the enemy contented themselves with their nominal victory upon the left. On Saturday, the roads being clear, Smolensky withdrew the remainder of his little army towards Almyros, which he gained by easy stages, practically unmolested during the march. He continued to exhibit the same tenacity there, for he was ordered to remain at that place until a further command came to fall back to Lamia. The fresh instruction was owing to the Crown Prince having abandoned Domoko and the Phourka Pass to the Turks whilst he retreated to Thermopylæ.

Upon that occasion also Prince Constantine declined to venture upon a general engagement, the battle of Domoko being an advanced guard affair, so far as the Greek forces were concerned. Yet the position was an almost impregnable one, for the Phourka Pass is nearly 3,000 feet high, and the hills behind overlook and command the roads by which the Turks advanced. Circumstances made it necessary that I should return to Volo whilst the Turks were there and during hostilities. From English friends and acquaintances I saw on that occasion I learned that the Turks, particularly the irregulars, had committed a great number of outrages of one kind and another. The least of their acts of barbarism was the burning of churches and dwellings, but that I had seen for myself. During a subsequent visit within Turkish lines, also during the war, I saw two thousand of the savage fanatical Albanian irregulars, who were called out and armed by the Sultan and sent into Greece for a purpose. The devilish work they were called out to do had been executed; mercilessly done, to judge from their own accounts of the atrocities they perpetuated.

Greece is a far richer country than is commonly supposed. The many beautiful buildings throughout the country, and particularly in Athens, are in themselves a proof of wealth. Scarce a tithe of the available land has been brought under cultivation. There are vast tracts of hillside and valley as destitute of population as the "Wild West" once was not so long ago, and as fit for settlement by the shepherd or the farmer. With irrigation and better culture the rich plain of Thessaly could be made to blossom as the rose from end to end. Fully half of it lies fallow. Thessaly alone could maintain the population of the Greece of to-day. Were it thought to be as noble an object of ambition the making of a people comfortable and well-to-do, as the adding of territory, the rulers of Greece have ample and not difficult work before them. Agriculture is of the most slipshod kind, except upon the big estates of the wine and cognac companies. But the chief source of weakness is the maladministration of the finances. Customs duties are levied in a very loose and criminal fashion. English merchants declare that wholesale cheating goes on; whilst one man has to pay "through the nose," another, through

political influence or bribery, gets his goods in free. For much the same reason, not half of the other taxes are ever collected or paid into the Treasury. The revenue, they say, would be instantly doubled if it were properly and faithfully taken up and paid in.

These are not the views of men in the street, but of prominent Englishmen, many of whom have large interests in Greece, and have spent a lifetime in it. To a man they advocate that the only cure is foreign financial control. Distinguished and patriotic Greeks privately say the same. Foreign financial control, they declare, though it would not be openly acceptable, would save the country and help to recast the temper and habits of the people, to the advantage of Greece and the Greeks. Greece has vast herds of cattle, she has minerals and timber that would be marketable in greater quantity were there a better administration of her affairs. The grape culture could be increased to an incredible extent. Of course the Germans, who have considerable financial interest in Greece, favor the setting up of a foreign financial control. The Great Powers could secure the establishment of a tutelary financial control if they wished. In their present frame of mind the Greeks would yield to such a demand from the Powers if it were for a defined period of, say, twenty years. An honest administration for that length of time would set Greece in a sound financial position, and do much to mend the habits of the people in their monetary transactions. For the moment the Greek is rather abased in his own conceit. When peace is finally assured his egotism will no doubt soar again. Meantime there is no more bombast about his fighting Turkey, and all Europe, too, if need be, single-handed, and draining his blood to the last drop in the struggle. He prefers to live and keep his blood, even if Crete has to go hang. Let but Europe help him to escape the wrath of the Turk, and he will be content for awhile.

BENNET BURLEIGH.

CONTEMPORARY OPINION:

ON CONVERSATION

THE art of conversation, writes James Payn, the novelist, in the current number of the "Nineteenth Century," has suffered in England from the example of its most famous professor. Dr. Johnson understood it theoretically, but even so only to a limited extent. He was supposed to form his view of it in accordance with the rule of Lord Bacon — 'to speak leisurely.' That Johnson did not slavishly follow Bacon's precept is, however, very certain. So far from being 'leisurely,' he jumped down the throats of all who disagreed with him. 'You may be good-natured, sir,' said Boswell with unusual spirit, 'but you are not good-humored (which the doctor had just plumed himself on being). I believe you would pardon your opponents if they had time to deprecate your vengeance; but punishment follows so quick after sentence that they cannot escape.' The idea of his ever being at a nonplus is ridiculous indeed, though he was sometimes at a loss for a repartee from sheer indignation. The rights of his little passage of arms with Adam Smith are much disputed. That he remarked: 'You are a liar,' seems tolerably certain, but whether the other philosopher did retort in the quite unprintable and by no means pertinent words that are attributed to him is doubtful. At all events, the whole affair was not a good example of polite conversation.

Johnson's great mistake was in confounding conversation with monologue. 'We had good talk this evening,' he said on one occasion, when returning from a party where scarcely any one had been able to get a word in edgeways except himself. If he had said, '*I* had a good talk,' the observation would have been faultless, but of conversation such as he sincerely believed had taken place there had been none. He could define it of course as he could everything else, and sometimes affected to despise it. When Boswell asked him, in his importunate fashion, what was the use of meeting people at dinner, where no one ever said

anything worth remembering, 'Why, to eat and drink together,' replied the Doctor, 'and to promote kindness; and, sir, this is better done when there is no solid conversation; for when there is, people differ in opinion, and get into bad humor, or some of the company are left out and feel themselves uneasy.'

Later on, and even to some extent to-day, the essence of good conversation was thought to be contest. Even that graceful-minded and sweet-tempered writer, Robert Louis Stevenson, falls into the error when discoursing on this subject. With Johnson, opposition was the very salt of life, and his best sayings were evoked by it. When ill one day and unable to exert himself, on Burke's name being mentioned, he suddenly exclaimed: 'That fellow calls forth all my powers. Were I to see Burke now it would kill me.'

Antagonism of all kinds is, however, inimical to social enjoyment, and even argument should be employed but sparingly. The object of good conversation is not to convince — we are not pleading at the Bar, or preaching in the Pulpit — but to exchange ideas, expressed in the most attractive form, to ameliorate, to interest, or to amuse. It is a mistake to suppose that a change of society is necessary for its enjoyment. When friends are found to our mind, we do not tire of their talk. It is not likely, though it is quite possible, that a stranger may be an acquisition, but a company of intelligent persons who meet one another are independent of recruits.

Goldsmith, who never wrote a foolish thing and seldom said a wise one, thought differently; he expressed a wish for some additional members to be added to the Literary Club, 'For there can be now,' he said, 'nothing new among us; we have travelled over one another's minds;' to which Johnson calmly but confidently observed: 'Sir, you have not travelled over *my* mind, I promise you.' The Doctor, of course, was so exceptionally gifted that it was a treat to listen to him, if a man were content to deprive himself of the right of reply; but he had no notion of the 'give and take,' without which there is no social intercourse.

A good talker should be a good listener, though also capable of cutting short a bore; he should be appreciative of the remarks of others, and never influenced by that vulgar rivalry that causes some men to strive for the mastery in anecdote — the 'capping' of stories, as old writers term it. Anecdotes, however apt and witty, are, after all, a form of monologue, and should be used with discretion.

Even the best *raconteurs* are tempted to draw too largely upon their deposit accounts; a certain intoxication seems to seize those not in the very first rank when they have made a success or two in this line, and I have known one with a great reputation who could never be trusted after a capital story not to wipe out the remembrance of it by a dull one. He really did not seem to know what was good and what was indifferent; he had a large quantity of the commodity (anecdote) on his hands, and must needs get rid of it at any cost to his reputation. A high-class but still detestable talk-stopper is the man of rounded periods. Everybody knows how he is going to finish his sentences, but he will do it his own way, and it is a long way round. One is inclined to say to him what Scrooge so pathetically observed to his partner's ghost, 'Don't be flowery, my friend, don't be flowery.'

These are by no means the greatest obstructionists in the way of conversation. Some persons might almost be called professional talk-stoppers. They delight in questioning the truth of a good story, or in picking some hole in it, to prove that it had a better reception than it deserved. They lay their finger on some trivial inaccuracy in a date or a name; they bring no provender to the intellectual picnic; their sole contribution to it is a senseless depreciation, which they conscientiously believe adds to the agreeableness of the evening. I wish no fellow-creature dead, but I do think this class of person should be relegated to some other sphere of usefulness, where he would be appreciated. It is all very well to say, 'Let us have no cliques,' but some precaution must be taken to keep persons of this sort out of any society which has a claim to consider itself agreeable.

In old days a very innocent but still very effectual talk-stopper was the child. Parents used to bring their terrible infants into grown-up company, even of an intelligent kind. It was an outrage of that description which caused Charles Lamb to propose the health of Herod,

King of the Jews. In scarcely a less degree (though one hesitates to acknowledge it) the presence of the young person of either sex is to be deprecated.

Some persons have the rudeness to go further, and assert that in the presence of the gentler sex conversation, not so much of an intellectual but of a natural or dramatic, and especially of a humorous kind, can seldom be carried on. It has been said, indeed, that a bright and clever woman 'lifts the conversation' at dinner parties, but what sort of conversation do we generally find at dinner parties? And what must the conversation be that requires 'lifting?' It is quite true that the talk of a polished and educated woman of mature years and a liberal mind is one of the most delightful of intellectual pleasures—it has well been called a liberal education—but how rare such women are! And how terribly even *they* are handicapped. They can talk of literature, of politics, and even of religion, though in the last case seldom with any freedom; but speculations on 'fate, free will, foreknowledge absolute,' the subjects of the best kind of conversation, are not to their taste, while from the discussion of some of the most interesting topics connected with human nature they are of necessity debarred. A better and wiser adviser of a young man in social matters is not to be found than in some ancient lady of wealth and position, whose very voice has persuasion in it, and who speaks from the fulness of her own knowledge. 'I am an old woman, you know. Tell me your trouble.' But that is only a duet, though one of exquisite sympathy; the talk of two. As a rule, women's talk, like that of the aristocracy, is almost always personal.

The flippancies and cynicism of the smoking-room are very naturally in ill odor; yet the brightest conversations within my own somewhat extensive experience have been held under the benign influence of tobacco. It nourishes quiet thought and does away with ill-humor; smokers do not talk unless they have something to say, and are careful to say it not at too great length, or their pipe would go out. Thus anecdote is restrained within proper limits and monologue is rendered impossible.

It is rather invidious to pronounce which profession produces the best conversationalists, and such a judgment must be open to many exceptions; it can be at most but a general impression; but on the whole—there is nothing like leather—I think men of letters are the best talkers. It is true they are sometimes the worst from a negative point of view, since some of them cannot talk at all. The sole channel of their intelligence is their pen. But the higher class of literary men have generally something interesting to say, because they are students of human nature, and adapt their experiences of it to their company. They never talk of their own books, nor very much even of literature. One of the many gifts of Dickens is known to be that of public speaking; but his conversation with his intimates was still more delightful; not at all witty, but intensely humorous, though combined with great earnestness, however slight might be the subject. He disliked general society, chiefly, I think, from the fear that some foolish person would compliment him to his face, a stroke of vulgarity that requires a master of fence indeed to parry.

Lever was a *raconteur* of the first sparkle, but after an hour or two one had enough of him. The best conversationalist I ever knew (that is among the departed) was a man of letters, W. G. Clark; he was one of the editors of the Cambridge Shakespeare, but had a higher reputation as a classical scholar. He 'wore his weight of learning like a flower,' which is by no means usually the case with learned persons; they have no 'buttonhole' themselves, but they buttonhole other people, and their perception of humor is generally confined to a false quantity. I can never understand why this error should be so mirth-provoking in a dead language, and so devoid of amusement in a living one.

Small literary folks are seldom good company; they talk literature too much, and though it is the best 'shop' to talk about, 'shop' is always better left alone. Observe how a soldier with a record of distinguished service avoids it; from a certain fine sense of modesty no less than good taste. He is as difficult to draw as a badger, but when drawn gives excellent sport. I am not one of those literary persons who seem to take a pleasure (for it is always affected) in contrasting to his disparagement Captain

Pen with Captain Sword (for it is something, as now happens, 'to have at one's back a million men'), but I must admit that there are few kinds of talk so attractive as that of the unwilling warrior making light of experiences, which if they had happened to me, I feel, with a secret blush, would have formed a more constant topic of conversation.

The talk of barristers is often very clever, but too inclined to be shoppy; they remind one of public school men, who, after they have ceased to be boys for half a century, will still retail the reminiscences of that far-back time to one another, without much consideration for that portion of the company who have neither been at Eton nor Harrow. The men of the gown are bright enough, but even when good-natured are too apt to affect cynicism, which destroys at one blow both geniality and naturalness.

'The lower branch of the profession' are generally silent and severe (wherefore I know not, and Heaven forbid that I should draw the secret from its 'dread abode'), but now and then we get an admirable specimen from this collection. There is nothing like your 'family lawyer' as a receptacle of secrets, matters of real human interest, and sometimes he will open a closet, without divulging its whereabouts, and show you a skeleton.

I had once a friend who had no rival as an exhibitor of this description—the happiest mixture of grave and gay conceivable, and who possessed quite an anatomical museum. Some of the heads of families he had to deal with deserved a fuller portraiture at the hands of the dramatist or the novelist, but as sketches they were faultless.

Taking them all round, I had rather talk with a strange doctor than a stranger of any other profession. They have generally seen a great deal of human nature, and if they have only seen a little of it, it is worth hearing about. They never talk about Art, at all events. I confess I am rather afraid of travellers, unless they are commercial travellers. They are too full of information, and are too often anxious to impart it. Sometimes it is not even true.

As to the clergy, they are a good deal weighted as regards conversation. Coleridge once observed that Nature was the Devil in a straight-waistcoat. Clergymen are Angels similarly attired. There are, and have been, however, great exceptions; Sydney Smith, for example, whom no layman, except, perhaps Douglas Jerrold, has ever excelled for brightness, and none have equalled for geniality. How much conversation has to do with manners may be gathered from the biographies of witty persons. How dull they are!

Folks talk of 'the art of conversation,' and of course there are some rules which need to be observed by all who would excel in it: to be brief, without curtness; to avoid any 'talking to the gallery' (but indeed in the sort of company I have in my mind there is no gallery); to give and take. But the fact is conversation is a gift of nature; when artificial it is never really good. The disposition must be genial, the wit ready and keen, but of the kind that 'never carries a heart stain away on its blade;' the humor abundant, but always arising from the situation; not pumped up, but a natural flow; there must be a quick sympathy, and above all the desire to please.

* * *

Within the present century, observes a writer in a recent issue of the "Quarterly Review," in a critique on the "Novels of George Meredith," Fiction has made a kind of triumphant progress from village maiden to reigning beauty at the Court. Her charms compel universal homage. She has taken without protest a place beside poetry, the drama and history, as a branch of art, hardly if at all of inferior dignity. She has usurped the place of these older literary arts in public favor. This position she has achieved while still in her artistic youth. She has enlarged the sphere of her influence, and is likely still further to enlarge it, for she draws to herself every variety of talent and offers it an open field. In the novel we have the formal mould into which much of the best creative energy of the century has been directed; and in his choice of the novel as the best medium for his own imaginative work Mr. Meredith followed a true guiding instinct. Here the peculiarities of his methods detract less from the effectiveness of his work than in his poetry. Traditions and conventions are of less weight in fiction than in any other department of literary art, and of this fact Mr. Meredith has taken advantage.

Nevertheless, and in spite of his indifference to literary traditions, many of the qualities of Mr. Meredith's work are classic qualities. . . . In his methods Mr. Meredith, if not without precursors, has pushed beyond the limits of tradition. He is content to indicate rather than to describe, to suggest rather than to paint a picture, 'to rouse the inward vision' rather than elaborate a finished masterpiece. These are the characteristics which delight Mr. Meredith's disciples and remind them of Browning. . . . It is in the breadth of his humor and in the breadth of his characterization that Mr. Meredith's greatness consists; in his intellectual penetration and his imaginative range. His method involves revelation of character by analysis, but analysis conducted while his personages pass through the fire of some crucial position, or are subjected to the shock of circumstance. Thus is his tragedy human.

THE SCIENCE OF MAN

PROF. W. M. FLINDERS PETRIE, the eminent Egyptologist, in an address before the British Science Association, has this to say about the Science of Man or anthropology, and its claims in any scheme of broad culture. Prof. Petrie, we may remind the reader, is the writer of the articles on 'The Pyramid,' and on 'Weights and Measures,' in the Encyclopædia Britannica:

"Until the present generation there have been two great educative influences on the view of life taken by men of our race, the Old Testament and the Classics; but with the pressure of modern requirements both of these excellent views of other civilizations are being crowded out, and we meet men now to whom the world's history began when they were born. There is great danger in such ignorance. All the painful and laborious experiments in social and political problems during past ages are ignored, rash trials are made on lines which have been repeatedly proved to be impossible, and real advance in any direction is thwarted by useless repetitions of the well-known failures of the past.

"It is the business of anthropology to step in, and make a knowledge of other civilizations a part of all proper education. In this direction our science has a most important field before it, at least as valuable as geography or history, and far more practical in developing ideas than many of the smatterings now taught. To present a view of another civilization, we require to give an insight into the way of looking at the world, the modes of thought, the aims of life, the checks and counterchecks on the weaknesses of man, and the construction of society and of government in each case. The origin and utility of the various customs and habits need to be pointed out, and in what way they are reasonable and needful to the well-being of the community. And above all, we ought to impress upon every boy that the civilization in which he grows is only one in innumerable experiments in life that have been tried; that it is by no means the only successful one, or perhaps not the most successful, that there has been; that there are many other solutions of the problems of community and culture which are as good as our own, and that no solution will fit a different race, climate, or set of conditions.

"How such a sense of proportion in the world is to be attained, and what course of instruction will eradicate political fanaticism, and plant a reasonable tolerance of other forms of civilization, is the problem before us as practical anthropologists. The highest form of this perception of other existence is reached in the best history or fiction—which enables the reader to strip himself for the time of his prejudices and views of life, and reclothe the naked soul with an entirely different personality and environment. Very few writers and those only in rare instances, can reach this level; it needs consummate knowledge, skill, sympathy, and *abandon* in the writer, and if without these, it is neither accurate nor inspiring. The safer course is carefully to select from the best literature of a civilization, and explain and illustrate this so as to leave no feature of it outside of the reason and feelings of the reader. Here we run against the bigotry of the purely classical scholar, who looks on ancient literature as a peculiar preserve solely belonging to those who will labor to read it in its original dress. No one limits an aquaintance with Hebrew, Egyptian, or Arabic authors to those who can deal with those tongues; and Greek and Latin authors ought to be as familiar to the English or American reader as Milton or Macaulay. To say that because it is impossible in a business education to give several years to a working knowledge of ancient languages, that therefore all thought written in those languages shall be a sealed book, is pedantry run mad. A few months, or even weeks, on translations, will at least open the mind, and give an intelligent sense of the variety and the standpoint of the intellect of the past.

"The books required for such reading should cover the life of Greece, Rome, Babylon, Egypt, and Mexico in ancient times; and China, India, Persia, Russia, Spain, and one or two low civilizations, such as the Andamans' and the Zulus' in modern times. Neither histories nor travels are wanted for this purpose; but a selection of the literature which shall most illustrate the social life and frame of the community, with full explanation and illustrations. We need not excite wonder, astonishment or disgust; but rather enable the reader to realize the daily life and to live in the very minds of the people. Where no literature is available, a vivid study of the nature of the practical working of their civilization should take its place."

STUDIES IN AMERICAN HISTORY:

HOW PRESIDENTIAL CANDIDATES HAVE BEEN NOMINATED

A READER of SELF CULTURE wants to know to what extent "availability" decides in the selection of a candidate for the presidency. The question is not happily put. Availability is a very comprehensive term and includes everything that enters into the problem of nominating and electing a President. What the correspondent evidently wants to know is to what extent fitness alone does or does not govern in the selection of a candidate. Frankly, the question cannot be fully answered. It is impossible for any one or any set of men to judge with certainty of the qualifications a man may have for the presidency. Men have been nominated for the presidency who apparently had few qualifications and have made excellent executives. Men supposedly the best equipped have been comparative failures. An optimistic statesman has said that there is in every school district in the United States a man who would make a good President. This is drawing the long bow. It is certain that this country will never suffer for good men, but it is difficult to say in advance whether a man will suit or not because no one knows with certainty just what he will be called upon to do. Just at this time the President has great power and authority and what the President does or does not is fraught with good or ill to the great Republic.

In this connection it may not be without interest to run rapidly over the nominees for the presidency and give a brief account of the manner of their selection. This is the only way to answer the question with any satisfaction.

The First President

Washington was chosen President as one might say by acclamation. He was the only candidate thought of, and if it had not been known that he would be the first President the Constitution would never have been drawn up or adopted. In spite of the unanimity of the choice he met with the most factious opposition as President and suffered as much as any President from the bitterness of partisan rancor. He was re-elected, however, unanimously, and might have had a third term had he chosen to accept it.

Adams, a Logical Candidate

John Adams was selected as the candidate of the Federalists in 1796 because he was the "logical" candidate. He was backed by the New England Federalists though he was opposed by the partisans of Hamilton who did not like him. Hamilton had left the cabinet but he was full of ambitions and he knew that Adams was not the man to further them. The contest was likely to be so close however that Hamilton did not dare openly oppose him, though secretly an attempt was made to have Thomas Pinckney, the Federalist candidate for vice-president, given first place by juggling with the Legislatures which then chose all the electors. The plot failed, but Adams was only elected by the votes of two electors (one from Maryland and one from North Carolina) who were supposed to be friends of Jefferson. Jefferson was also the "logical candidate" of the Republicans. He was their leader and the life and soul of opposition to the Federalists. Under the Constitution he became vice-president which was then considered a far more honorable office than at present.

The Great Contest of 1800

In 1800 Adams and Jefferson were again the candidates and this time Jefferson won. It has already been explained in these papers how an attempt was made by the Hamilton wing of the Federalists to elect Charles C. Pinckney, candidate for vice-president, to the first office but the plot failed. Unexpectedly, however, Jefferson and Burr had an equal number of votes and the House had to choose between them. The House was controlled by the Federalists and at one time it seemed as if Burr would be chosen. He was so notoriously unfit for the place that Hamilton interfered and Jefferson was elected. As a result of this Hamilton was killed by Burr.

Madison had been Jefferson's Secretary of State for eight years and succeeded him almost without a struggle. In those days party candidates were chosen by a caucus of members of Congress, but the President had great power in nominating his successor. It was customary also for State Legislatures to pass resolutions en-

dorsing a candidate long before any caucus action. At one time Monroe was very anxious to succeed Jefferson and felt aggrieved that Madison was preferred before him. While abroad as minister Monroe' s course had not been entirely satisfactory to the administration and the rejection by Jefferson of a treaty made with Great Britain without even sending it to the Senate, was taken by Monroe as a personal grievance. Jefferson with his plastic touch, however, smoothed the matter over and there was no breach among the Virginians as was threatened.

Madison's Hard Experience

Madison was a man who, one might have supposed, would have made an ideal candidate and an ideal President. He was the "father of the Constitution," had been almost all his life in public service, and succeeded naturally to the presidency. Yet he made a most dismal failure as an executive in war times. When Washington was captured his administration went to pieces. He was not fitted for such stirring times and it was only the abilities of Monroe that saved the administration from complete collapse in 1814. He held the government together and was a sort of second father of his country in a small way. As a result he was easily chosen President because there was no one to contest his claim. The Federalists who had been in open opposition to the government went to pieces and their candidate, Rufus King, only polled 34 electoral votes. In 1820 Monroe, who had made an excellent executive, was chosen for a second term unanimously except for the vote of one elector, who vowed that no man should share such honor with Washington.

End of the Revolutionary Candidates

With Monroe the choice of Revolutionary fathers for the presidency ceased, for the reason that there were no more to elect. The contest in 1824 was spirited and one of the most remarkable in our annals. Monroe had positively refused to use his influence in behalf of any candidate and it was free for all. John Quincy Adams considered himself the logical candidate. In point of service he outranked all his rivals and in point of ability he was second to none. Indeed few men have ever been so well equipped for the presidency and few men have made such political failures as President. Adams was a son of the second President, had served in the Senate, had been minister to Russia, and to him was due the greater part of the credit of inducing the Czar to interfere in our affairs during the War of 1812. This interference brought about the Treaty of Ghent which did not result as the British Government had expected owing to the stupidity and ignorance of its own commissioners. Adams was a member of that Commission from the United States and did good work though he was not the foremost member. That honor was reserved for Albert Gallatin who managed to hold his ambitious and excitable colleagues in check while he cleverly outwitted the British. As Secretary of State Adams had been a great success. He was practically the author of the Monroe Doctrine and had worked hard to get into closer relations with the newly-erected South American Republics. In spite of his great abilities he was not a good all-round man. He had none of the arts of popularity and these are quite essential in a President. He could not get into touch with people or politicians and yet he was honest and patriotic to the core. If fitness, as it is ordinarily spoken of, is a test, then Adams should have made an ideal President.

Clay's First Race

Henry Clay was also a candidate. He had been in public life almost since attaining his majority. He was the first of breezy statesmen from the West who came into great prominence. Jackson had been in public life before him for a short time, but no one looked on him as a statesman. He was a soldier and a good one at that, but Clay could not conceive of him as a presidential possibility and here he made the greatest mistake of his life. Clay had been Speaker of the House of Representatives and the leader of the young War Hawks who had forced the declaration of war against Great Britain and had pressed its continuance after it had been learned that the Orders in Council had been withdrawn. He also had been a member of the Commission at Ghent and but for his earnest protest the British would have been conceded the right of free navigation of the Mississippi which Adams was willing to con-

cede. This angered Clay so that he was willing to sacrifice the Newfoundland fisheries, in which Adams was so much interested, but Adams would have refused to sign the treaty if that had been the case.

Andrew Jackson who was not considered as of importance turned out to be the most formidable candidate of all. With the overthrow of Federalism, democracy was gaining among the people. Jackson was the sort of man the common people liked. He did things while the other men were looked upon as theorists by many. The hero of New Orleans was not a man of education or culture, but he possessed a keen knowledge of the people and had many qualifications — far more than his rivals would admit — for the presidency.

A Man with Many Friends

The fourth candidate was Wm. H. Crawford of Georgia, who had been Secretary of the Treasury. He was a large man physically and an astute politician. Though not highly educated he knew the arts of politics and was personally popular. He relied on his personal popularity to carry him through, but unfortunately for him he made enemies as well as friends, and he was third on the list when the ballot was taken. There being no choice, the election was thrown into the House and only the three highest candidates were eligible. Clay threw his votes to Adams and the latter was elected. As was said, he was a great statesman in many respects, but he failed as a politician and every great statesman must be something of a politician, for success in this world is won in many ways. The sneers so often cast at politicians are ill-timed. Every citizen should be a politician. Indeed every one is and most people are very poor ones because they neglect their duties and think they make amends by abusing those who do take an interest in the active work of politics.

Jackson Wins at Last

Jackson who led the list in 1824 was easily elected in 1828 and was the most successful of all our Presidents without exception, if to be successful is to accomplish one's purposes. And, indeed, this is not stating the whole of the case. Jackson was a positive man for good and for evil, but the unbiased critic must award him great praise for the net results of his two terms as President. He exalted democracy and had perfect confidence in himself. He was not the ideal man, but after all he was a great man and one of the best of our Presidents.

Henry Clay ran against him a second time in 1832, but the people had no hesitancy in deciding between a man who had positive views and did things and a political trimmer. The brilliant "Harry of the West" is entitled to much praise from his country, but he alone is responsible for his failure to gain the high honor he coveted.

The Woman's Candidate

In these papers reference has been made to the only failure of Jackson's political life — that of controlling the social ethics of Washington. Because the wives of cabinet ministers would not recognize socially the wife of Secretary Eaton, who had been Peggy O'Neil and with whom the tongue of scandal had been busy, and because Jackson could not force them to do so, the cabinet was reorganized. In this contest Van Buren, his Secretary of State, had stood by the President and Mrs. Eaton. As a reward, he was sent to Great Britain as our minister. Out of spite, Clay, Webster, and Calhoun had this nomination rejected and in retaliation Jackson had him nominated vice-president. Then when he was ready to step down, he secured the election of Van Buren to succeed himself and his triumph was complete. Never has there been such an instance of executive dictation of a nomination.

Against Van Buren the Whigs had no single candidate and again there was a free field for all. Webster, William Henry Harrison, Willie P. Mangum, and Hugh L. White of Tennessee, all ran in the Whig interest. All were able men but Van Buren easily won.

The Tippecanoe Campaign

In 1840 the Democracy again nominated Van Buren, and this time the Whigs got together. At a National Convention held in Harrisburg, Pa., delegates met from all over the country. Clay was again the favorite and had a majority of the delegates, but the convention adopted the unit rule requiring each State to cast its vote as a whole. This defeated Clay and it was a terrible blow to him, for he knew

that this time he could have been elected. There were many persons, however, who liked him personally but were disgusted with his vacillating policy. One of Clay's particular friends in the convention was John Tyler of Virginia. When Harrison was nominated, he burst into tears. This greatly affected the convention and when it came to nominating a vice-president, Tyler was given this as a sort of consolation prize for Clay. Bitterly did the Whigs rue this action in after years. Harrison was elected but died after one month of service and Tyler came to the presidency and turned apostate.

A New Era in Politics

From the year 1840 dates a new era in national political organization. The National Convention was now a fixed institution with all parties. It did away with the bossism of Presidents or of Congressional caucuses, but bossism was not gotten rid of. It now became a State institution and has flourished more or less ever since and is by no means the great evil that some persons think. Organization is as necessary in politics as in any other line of work, and it is hard to decide where is the line between adequate leadership and so-called bossism. The Whig party adopted the majority rule and that has been the case with most political parties, but the Democratic party has adhered to the rule that nominees must have a two-thirds vote and this has had a wonderful influence on our history. It has made and unmade Presidents and the question of "availability" has narrowed down to this — who could secure the necessary two-thirds vote? As a result, the nominees have almost always been compromise men.

In 1844 the Democratic party was in bad shape, in some respects, but it had an issue — the annexation of Texas — that promised well for success. The leading candidates for the nomination were Van Buren and Cass. Van Buren led on several ballots, but when it was seen that he could not get the necessary two-thirds, his votes began to go to Cass. The opponents of the latter succeeded in forcing an adjournment and fixed up a deal over night by which the nomination went to James K. Polk, the first dark horse candidate in presidential politics. It would be idle to say that Polk was nominated on his merits, for very few people knew anything about him, and this turned out to his advantage, for Clay was nominated by the Whigs and he was a very vulnerable candidate. Even as a candidate he tried to face both ways on the Texas issue. Nevertheless he might have won but for the appearance of a third candidate in the field. This was James G. Birney who had run as the candidate of the Liberty Party in 1840 and had received 7,059 votes. Now the anti-slavery interest had grown and he received 62,000 of which 15,000 came from New York State and were drawn almost exclusively from the Whig party. By this Whig loss, Polk carried the State by 5,000 plurality and was elected. Polk was one of the most successful of all our Presidents in carrying out his policy — probably the most so. Whether his success was a desirable one is for the political student to decide for himself.

Taylor wins in 1848

In the campaign of 1848 Cass, who had finally won the nomination from the Democracy, was pitted against Taylor, the successful general who was absolutely without experience in public affairs, having spent all his mature years in the army most of them far from civilization. He was nominated by the Whigs over Clay purely on his military record and they did not even give him a platform to run on. The selection, however, proved fortunate. Taylor was elected solely through the Van Buren defection from the regular Democracy and made one of the best Presidents we ever had considering his brief term of service. His death brought Fillmore to the White House who was a genuine Whig but belonged to the Clay wing which favored the Compromises of 1850. He signed these Compromises and in putting his signature to the Fugitive Slave Law signed his political death-warrant. Clay was the real President and with all his experience and abilities does not compare favorably with the untried Taylor.

The Last Whig Campaign

In 1850 there was another bitter struggle for the presidency. Clay and Webster were dead. Webster had been offered second place with Taylor but refused it with disdain. General Scott now came forth as the leader of the Whigs who did not know that their party was

dead beyond all resurrection. There was a big contest for the Democratic nomination. Cass, Buchanan, Marcy, and Douglas were all aspirants but again the two-thirds rule was an obstacle. Cass had a majority of the delegates, but another dark horse was nominated in the person of Franklin Pierce of New Hampshire. He won easily although there was a Free Soil diversion under Hale which captured many Democratic votes and many Whigs also. Scott received more votes than Taylor had done four years before, but he had a pitiful showing of electoral votes.

Failure of a trained Statesman

In 1856 there were three candidates again and this time the third party was more formidable than ever before. The Democrats nominated Buchanan this time and he was nearer the real choice of his party than any nominee from 1844 to 1876. The majority of the Republicans wanted Seward, who was the most conspicuous man in the party, but he was not "available" because, as governor of New York, he had offended the Native Americans who were a formidable factor in the political situation. The nomination went to Fremont, a man very popular by his California discoveries but who was not worthy the office and whose after-life showed that he was not the man for the head of the nation in a crisis. The third party, being the Americans, nominated Fillmore who polled nearly 900,000 votes, but Buchanan was elected. Buchanan had been in public life almost since reaching his majority, had experience in many directions and so far as could be judged was an excellent man for the place. How he failed at the critical moments is a matter of history.

The Campaign of 1860

In 1860 there were four candidates for the presidency. The Democracy was split on the question of slavery extension. Douglas had a majority of the delegates but not the two-thirds until after the split came and new delegates were elected to succeed those who had left the Charleston convention. The dissident Democrats — those who objected to the platform adopted at Charleston — nominated Breckenridge. The Constitutional Union party, which drew its strength largely from the former Whigs and Native Americans of the South, nominated Bell of Tennessee. The Republicans met at Chicago and the general expectation was that Seward would be the nominee. He had by far the largest number of delegates pledged to him, and it can be fairly said that he was the real choice of the masses of the Republican party. But Seward's friends who came to Chicago so confident met with an opposition they did not expect.

We are all agreed in believing that Lincoln was one of the greatest of our Presidents, and many believe that he was divinely chosen for his great work. If this is true, it shows that Providence works through human agencies, for of all political conventions that were ever held there was more of dickering and log-rolling at Chicago than at any other convention in our history. Lincoln himself had been working hard for the nomination, though he hardly expected it. He had even offered to pay the expenses of a friend if he would get himself elected to the convention. What would political purists say to that in these days! It is not necessary to believe that Lincoln knew all that his friends did at Chicago, but he was "in the hands of his friends" and these friends tied his hands most beautifully, and Lincoln was honorable enough to carry out all their promises, which is more than some other Presidents have done. Why, for instance, were Cameron, Bates, and Smith, in the cabinet? By means of combinations Lincoln was nominated, and it was a distinct disappointment to the great body of Republicans.

So far as could be judged on the surface, Seward was far and away the best fitted man for the place, and the distrust of Lincoln extended long after he was elected, — so much so that Seward took it upon himself to offer to be President and let Lincoln be a figurehead only. It is needless to say that this offer, made in good faith, was declined, and history has shown how great a President Lincoln was, and how badly the country would have fared on several important occasions if Seward's advice had been taken. This is meant as no reflection upon the latter, who was a great statesman, and as Secretary of State did invaluable service. The point made here is that the man who was "available" made a better President than the one who seemed to be the best fitted for the place.

McClellan was nominated in 1864 as an emergency candidate and was a complete failure.

Grant's Two Terms In 1868 the natural turning of the people to military heroes gave Grant the nomination almost without a struggle. He has been harshly criticized for his administrations, but as time goes on these criticism are being modified and the historical verdict is largely in his favor. He was elected a second time easily over Horace Greeley, who was a great and good man, a man without a peer in his own sphere, but as presidential timber he was a failure. It should have been said that Seymour, who ran against Grant the first time, was a representative Democrat, but under the circumstances his candidacy counted for little, as the election of Grant was a foregone conclusion.

The Tilden and Hayes Contest The nomination of Tilden in 1876 was one of the best that the party could have made. He had been long in public life and his record as a reformer in New York City commended him to many people. The nomination of Hayes cannot be said to have been the deliberate choice of his party, for few people outside of Ohio had ever heard of him. He was a dark-horse candidate who won in a large field against Blaine, Cameron, Conkling and Bristow. Indeed it is likely that Blaine would have won at Cincinnati if some one had not turned off the gas one night during the balloting. During the night a new combination was made that landed Hayes. Blaine and Clay were the two most popular men among the masses of their party, if we can judge from all accounts, that this country has ever had, and yet neither reached the presidency.

An Emergency Candidate In 1880 Hancock was nominated by the Democrats after Tilden had positively refused to run. He was nominated on the score of "availability." The ever-memorable contest at Chicago need not be narrated in detail. Blaine, Grant and Sherman were the leading candidates and the unit rule killed them all off and Garfield was finally chosen. He was a dark horse. He was elected but died so soon that one cannot say what kind of a President he would have made. At least he did not keep faith with Conkling as the latter understood the matter. The merit of this controversy need not be discussed here.

In 1884 Blaine won the coveted nomination easily from Arthur who was the most successful of all our accidental Presidents. The Democrats nominated Cleveland because he had been phenomenally successful in New York politics and because many persons who had affiliated with the Republican party believed that he would make a good President. He was nominated on the score of "availability" and had other claims besides and these were justified by the people at the polls.

Blaine refuses the Nomination The nomination in 1888 at St. Louis went to Cleveland unanimously because he had given his party an issue. The Republicans were anxious to nominate Blaine once more, but he refused though it was believed that he would accept up to the time that the balloting began. Harrison was nominated by combinations and there was great disappointment in many quarters. On the score of public service and usefulness the nomination should have gone to Sherman, but the dark horse again won. Harrison was as little known by the public at large as any President since Pierce, yet in point of ability, either intellectually or as a constructive statesman, he ranks among the first. Unfortunately he lacked the arts of popularity which greatly hurt him when he ran again. Harrison in many respects resembled the younger Adams. Both were men of ability but neither received that amount of personal sympathy from the people which is so essential to a successful President of a republic.

In 1892 Harrison won the nomination after a hard fight, and if Mr. Blaine had made a canvass for the place he might have been nominated. Indeed, he would probably not have been opposed. The Democrats nominated Cleveland once more in a convention that will ever be famous for its bitterness and for the fervid oratory of Cleveland's opponents. His nomination was due largely to the tactful manipulation of William C. Whitney, and to the fact that Mr. Cleveland was in all respects the most "available" candidate with all that the term implies. He won.

In 1896 McKinley was nominated on

the first ballot by the Republicans, and was undoubtedly the popular choice of his party. This was true in a sense not before known, because his name was linked with the tariff in a personal way more than was Cleveland's with the opposite view. Bryan was nominated by the Democrats under circumstances so recent as to need no retelling. Never has the effect of a single speech in politics produced greater or more speedy results. As all know, the people decided in favor of the Republican candidate.

And now that the history of nominating presidents has been briefly rehearsed, it is only necessary to repeat what was said at the beginning, that the question of the correspondent cannot be fully answered. There is no criterion by which we may infallibly judge of the qualifications of men for any position in life. It is a matter of experience, and what that experience has been in this country, it has been the purpose of this article to set forth.

JOSEPH M. ROGERS.

JEAN INGELOW, POET AND NOVELIST

DEATH, the other day, has added another to the "stilled voices" in the tuneful choir of modern English minstrels. Miss Jean Ingelow, who died in London on the 20th of July last, came, like Tennyson, of a Lincolnshire family, and more than traces of the late English Laureate's influence can be found in her works. Since the death of Mrs. Browning, to whom she also owed much of her inspiration, and the passing away of Christina Rossetti, Jean Ingelow may be said to have held the laurel crown of the female poets in England; and though of recent years her popularity has seemed to wane, much of her work is likely, we think, to live. She was especially strong in the lyrical field, and her poetry is marked, as was Christina Rossetti's, by an introspective religious cast, as well as by much beauty and melody of form. If there be one dominant note in her song, observes an admirer of her work, it is a quiet joyfulness in the beauties of nature that forbids anything like querulousness or morbidity. In her pages we hear the birds in full song and see the flowers in bloom.

In her poem "Honors" it was one of the lessons she taught that in this love of natural beauty in its every form lay man's truest happiness.

> "For me the freshness in the morning hours,
> For me the water's clear tranquillity,
> For me the soft descent of chestnut flowers,
> The cushat's cry for me.
>
> "For me the bounding-in of tides; for me
> The laying-bare of sands when they retreat,
> The purple flush of calm, the sparkling glee
> When waves and sunshine meet."

The fine dramatic poem by which Jean Ingelow is best known, with its quaint Elizabethan dialect and haunting rhythm and refrain, is "The High Tide on the Coast of Lincolnshire." In spite of the often common handling it receives at the hands of indifferent declaimers and public reciters, the lines are destined to live. She has also written much other minor verse, of considerable beauty, and occasionally of no little originality and strength. Especially attractive are her stories in blank verse, such as "Brothers and a Sermon," and of great sweetness and purity is much of her subjective verse, to wit "Divided," and "The Songs of Seven." Alike in her poetry as well as in her novels, Jean Ingelow's powers were always devoted to high and noble ends.

A collected volume of her poetry first appeared in 1850, which has since been repeatedly issued, with considerable additions. In 1867 she published a separate volume of verse entitled, "A Story of Doom," while a third volume, "Poems by Jean Ingelow," appeared in 1887. These were followed successively by "Monitions of the Unseen and Poems of Love and Childhood," and "Poems of the Old Days and the New." She also wrote a number of works of fiction, besides several stories for children, full of delicate fancy and elevated thought. Of her novels the following may be specially mentioned: "Off the Skelligs" (1872), perhaps her finest production; "Fated to be Free" (1875); "Don John" (1876); "Sarah Berenger" (1880); and "John Jerome" (1886). At her death, Jean Ingelow had attained her seventy-seventh year.

G. M. A.

SOME TYPES OF MEN OF SELF CULTURE:

IX.—BAYARD TAYLOR, POET AND TRAVELLER

ALTHOUGH the dominant, life-long desire of Bayard Taylor's heart was to be a poet, he is, in the popular sense, and to his own countrymen, best known as a traveller. The literary world, however, knows him to have been much more than a mere traveller; and the scope and volume of the work he has left behind him prove not only the industry of the once poor Pennsylvania farmer-boy, but attest the irrepressible energy of his nature and the extraordinary versatility of his powers. And yet, with all his manifold labors and the undoubted success he achieved, no one who closely follows his career,—certainly none who has read his "Life and Letters,"—can believe that he was satisfied with the work he accomplished or the status he attained, even though his collected writings (including travel, fiction, poetry, and his admirable translation of Goethe's "Faust") extend to twenty goodly volumes, and he died holding the post of Ambassador to Germany. His is not an instance, where, had he written less, the quality would have been higher. It is rather, as we think, an instance of ambitions founded on too slight a foundation of creative ability, and upon an education too meagre and desultory to make good the intellectual deficiency, though ample enough to enable him,—as a modest man of letters,—to perceive, and to be secretly tormented by, the limitations of his powers. While we say this, however, we are not to be understood as depreciating either the man or his gifts. On the contrary, we not only hold both in high esteem, but we honor the poet the more since he himself recognized a lofty ideal in his work, and, with long and serious toil, earnestly sought to achieve it.

The poet, on his father's and on his mother's side, was of German descent, and in his youth he spoke the patois known as Pennsylvania Dutch.* The ancestors of the family were Quakers, though both parents and the son himself belonged to the Lutheran Church. Bayard Taylor was born in a village in Chester County, Pa., called Kennett Square, though when he was four years old the family removed to a farm in the vicinity of the village, where they continued to live until "Cedarcroft" was built, on the site of the old homestead. On the farm the youth was brought up and about it his earliest recollections gathered. Here he received from his mother the rudiments of education, eked out, until he went to a school in the neighborhood kept by a Quaker dame, by his own eager reading from the village library. Poetry and travel, we are told, were his chief delights, supplemented by a modicum of history and copious draughts of fiction. Years afterwards, it is related, when on his own travels, a poem which he had learned by heart or a book from the library which he had read, came back to him as he visited in person places which he had known only in imagination. From his early youth he seemed to live in an ideal world, and from his twelfth year he indulged in literary composition, his poetic temperament inciting him mainly to the writing of verse.

Young Bayard's education embraced, for a time, a little more than that which the dame's school afforded. This he received at an Academy in West Chester and later at one in Unionville, Pa.; but his schooling was over for him by the year 1842, though he ardently pursued his own individual efforts at self-culture, alike from observation and from books. N. P. Willis's "Pencillings by the Way" was an early source of pleasing instruction to him, and the delightful pictures of scenery and society set forth in the work had a stimulating influence on the youth and whetted his taste for travel.

After a brief period of teaching at the Unionville Academy, a vocation towards which Bayard Taylor was by no means drawn, he was apprenticed to a printer at West Chester, which gave the youthful poet the opportunity, when the drudgery of his duties at the case and hand-press permitted, to become familiar with

* "Life and Letters of Bayard Taylor," edited by Marie Hansen-Taylor and Horace E. Scudder. Third edition, 2 vols. 12 mo., Boston: Houghton, Mifflin & Co., 1885.

the mechanism of journalism and to indulge his increasing passion for verse-writing. His literary productiveness at this early period was great, and among the poems he then wrote was one which he had forwarded for publication to a Philadelphia journal. The poem was the means of gaining him the friendship of Rufus W. Griswold, editor of "The Poets and Poetry of America," who, a little later, issued Taylor's first sheaf of verse, samples of which had already appeared in the "New York Mirror" and "Graham's Magazine." The publication of "Ximena, or the Battle of the Sierra Morena, and other Poems," though it opened a vista to its author's literary ambitions, and to this extent was an event in his life, made no great mark in the world of letters, and its cost had to be provided for by subscriptions among Taylor's relatives and friends. Its issue, however, was a passport to the favor and friendly offices of other literary magnates of the time, and among others to N. P. Willis and Horace Greeley of New York.

At this epoch, the youth, now just entering manhood, was possessed by a longing to go abroad. Travel, he knew, would enlarge his mind, expand his faculties, and make good to him, in large measure, the defects of his education. His friend Griswold bought some manuscripts from him, for the Philadelphia "Post," and from other quarters he had commissions, paid for in advance, for poems and narrative pieces, then unwritten. Greeley of the *Tribune*, gave him, moreover, a conditional order for a series of foreign letters, of which he afterwards wrote eighteen from Germany. Having made these modest arrangements, and with less than $150 in his pocket, he sailed for Liverpool, and there set forth, on foot, to see the world and all the wonder thereof. After visiting the north of England and parts of Scotland, he crossed over to Belgium and proceeded up the Rhine to Heidelberg, thence to Frankfort-on-the-Main, where he settled for the winter of 1844–5 to study German and put his pen to such uses as he was able to turn into money.

Taylor's facility in acquiring languages was phenomenal, and his sojourn in Frankfort enabled him soon to speak German as a native. In the spring of 1845 he set out once more on his travels, knapsack on back, and saw Leipsic, Dresden, Prague, Munich, and Vienna, and after a brief return to Frankfort he crossed the Alps on foot and made his home for a while in Florence, where he acquired a knowledge of Italian. From Florence he proceeded, still on foot, to Rome and Civita Vecchia, where he took a deck-passage to Marseilles and travelled on foot to Paris. After a stay there and in London of some three months, he returned home and brought out a collected edition of his graphic letters to the N. Y. *Tribune*, in the volume entitled "Views Afoot" (1846), of which six editions were sold within the year. The tour and its results were very gratifying to the young traveller, though the toil had been great and the privations were not few. In the two years he had earned five hundred dollars, and his expenses for travel and maintenance for the period were just within the amount of his income. The mental gains of his visit abroad were, however, his most valued acquisitions, since they not only met the needs of his ardent, eager nature, but gave him an experience of the world and his fellowmen which were an education to him. The chroniclings of his journeys abroad delight one by their freshness, while they manifest his immense capacity for wonder and enjoyment. As he himself wrote, a new day had dawned in his life. Thought seemed to have taken a sudden growth, fetters of which he had not before been conscious were broken, and, as he phrased it, he was continually surprised at the broader light in which many subjects now presented themselves.

Shortly after his return from Europe, Taylor acquired an interest, with a friend, in a newspaper issued in his own county, but in 1847 he withdrew from it and removed to New York, where Greeley offered him a position on the *Tribune* — a connection which lasted for thirty years. The publication of his "Rhymes of Travel, Ballads and Poems" (1848) added to the reputation Taylor had gained as a traveller, while it opened the prospect of marriage with a young lady, whose parents had heretofore refused to countenance the young lover. His fiancée (Mary Agnew by name) was, however, in precarious health, and the poet won the happiness of calling her wife only within two months of her death, at the close of 1850.

In the interval two events happened which brought the young journalist into increased repute; one was the visit of Jenny Lind, the Swedish song-stress, to America; the other was the discovery of gold in California. To greet the famous Prima Donna, an Ode of Welcome was called for from the native versifiers, for which a prize of two hundred dollars was offered, and was won by Bayard Taylor; while to report on the goldfields on the Pacific, the poet-traveller was requisitioned by the *Tribune* and sent off post-haste to the scene of operations. The result of the latter enterprise was wholly gratifying to the author of the letters which appeared in the *Tribune*, and did much to establish and confirm his fame. The letters furnished the material for a new volume, which appeared, with the Putnam's imprint, under the title of "Eldorado, or Adventures in the Path of Empire." The following year saw the publication of a further volume of verse, "A Book of Romances, Lyrics and Songs" (1851), on the appearing of which he again went abroad to continue his wanderings in Europe and act as foreign correspondent of the *Tribune*.

His travels in the East, which extended from the summer of 1851 to the close of the year 1853, appealed powerfully to the orientalism in his nature and brought him still larger accessions of experience and knowledge. The tour included sojourneyings in Egypt, Asia Minor, and Syria, the product of which embraced his picturesque and glowing "Poems of the Orient" (1855), besides a rich series of letters to the *Tribune*. Five months were consumed on the tour, and he travelled over four thousand miles, gathering meanwhile more than a smattering of Arabic. Reaching Constantinople in the summer of 1852, he found despatches from the *Tribune* awaiting him, with a proposition that he should extend his tour to the Far East, and take advantage of Commodore Perry's proposed exploratory Expedition to Japan, by joining it in some quasi-official capacity and communicating to the paper the results of the governmental mission to Japan and the Chinese Seas. The new journalistic overture was duly accepted, and after a hasty visit to London Taylor proceeded by way of the Mediterranean and the Red Sea to India, arriving at Bombay at the close of the year. Striking across Hindustan, he paid visits to Agra, Benares, Delhi, Cawnpore and Meerut, mostly by rough conveyances, for it was the era before railways, saw the Himalayas and the Ganges, and was at Calcutta about the end of February. From Bengal he proceeded, by invitation, in a United States frigate to Macao, Shanghai, Nankin and Hong Kong. At the latter port he joined the Perry expedition and visited Japan and the Bonin and the Loo-Choo Islands, and, returning to China, embarked in a merchant-ship for New York *via* the Cape of Good Hope. The homeward journey consumed over three months, but he reached New York by the close of the year 1853.

The fruit of this extended travel is embodied in three volumes, viz. "A Journey to Central Africa," with glimpses of life and landscapes in Egypt and on the Nile; "The Land of the Saracens," with Pictures of Palestine, Asia Minor, Sicily and Spain; and "A Visit to India, China, and Japan." The interest of these volumes and the reputation gained by his entertaining *Tribune* correspondence, brought demands upon him to lecture in almost every State of the Union, and this kept him busy for a succession of winters and yielded him the means of building his home at "Cedarcroft," though it made heavy drafts upon his constitution and at times broke in annoyingly on his literary work.

In 1855, he published his "Poems of Home and Travel," brought out a new and revised edition of "Views Afoot," and compiled for a Western house a Cyclopedia of Modern Travel, besides doing active duty on the *Tribune*, of which he now held good dividend-paying stock, and at last felt himself in tolerably easy circumstances. In midsummer of 1856, the poet once more sailed for Europe, visiting England, where he made the acquaintance of Thackeray and Tennyson, and passing on to the Continent spent a little time in Switzerland and Italy with his brother and sisters; after which he made an excursion to Norway going as far as the North Cape, and returned to Gotha in the Spring of 1857. Here, later in the year, Bayard Taylor married Marie Hansen, daughter of a distinguished German astronomer, and happily spent the following winter in Greece. By the end of October, 1858,

the Taylors (who now included wife and infant child) were back in New York, and hence the poet proceeded to Kennett Square, to lay the foundations of his future home at "Cedarcroft" and resume book-making, with the preparation of a new course of lectures. The immediate outcome of his late tour was the volume entitled "Travels in Greece and Russia, with an Excursion to Crete."

For the future, our traveller dropped, in the main, the rôle of the nomad and settled down to steady and continuous literary labor. He was a rapid as well as an incessant worker, and in the sixties, when the Civil War interrupted all lecturing, he betook himself to the production of fiction. He wrote four novels, the first and best of which is "Hannah Thurston," though he had little skill in character-drawing and less power in inventing a plot. He displays, however, considerable pictorial skill, and the Quaker and biographical element in three of them adds interest to the romance. The other stories are "John Godfrey's Fortune," which deals with Bohemian life in New York, "Joseph and His Friend," and "The Story of Kennett"—the latter being largely autobiographical. To these works he added, in the sixties, a volume of travel, "Byways of Europe;" "The Poet's Journal," a metrical quasi-autobiography; and the patriotic ballad of "Abraham Lincoln."

In 1862 Bayard Taylor accepted a proposition to act as secretary to the Hon. Simon Cameron, the accredited minister to Russia, accompanied by the assurance that as Mr. Cameron's residence in St. Petersburg would be short, he would remain as *chargé d' affaires*. The compact on Mr. Cameron's part was faithfully carried out, but when that gentleman resigned, the appointment of a successor fell to a previous holder of the office, and Mr. Taylor returned to the United States. At this period he lost his only surviving brother, who fell at Gettysburg, an event that lends pathetic interest to the poet's Ode at the dedication of the national monument on the field of battle.

At Cedarcroft were produced "The Picture of St. John,"—"a poem for poets and painters," as Whittier characterized the work,—and the unequalled Englishing of the first and second parts of Goethe's "Faust," on which Bayard Taylor's abiding fame rests. These were followed successively by "The Masque of the Gods" (1872), a rather mystical, philosophical poem, said to be the product of four day's work; "Lars: a Pastoral of Norway" (1873); "The Prophet: a Tragedy" (1874), founded on a Mormon episode; "Home Pastorals, Ballads and Lyrics" (1875), full of tender, lilting and artistic work; the patriotic "National Ode" (1876), written for the opening of the Centennial Exhibition; and the ambitious but in many respects striking lyrical drama, "Prince Deukalion" (1878), in which the poet traces the course and tendency of civilization. Besides this mass of serious and exacting labor, Bayard Taylor published a "History of Germany;" "Studies in German Literature," embodying his lectures at the Lowell Institute; and a volume on "Egypt and Iceland." With the strenuous and ceaseless toil which all this labor implies, what wonder that our author's life was a brief one.

The end, alas! was now not far distant. The closing chapter in his career, however, was a hopeful and alluring one. In 1877, President Hayes nominated him as Minister to Berlin, and the nomination was not only warmly endorsed by the Senate, but received a well-nigh universal ratification. The ambassadorship was entrusted to most competent hands, and, had he lived, Bayard Taylor's diplomatic laurels would not been less green than those of his distinguished predecessors in the high office. The confirmation of his appointment was followed by a series of spontaneous demonstrations, which bore witness alike to the fitness of the selection, and to the respect and love of his intimates and friends. He entered upon his official duties in May 1878, and was most heartily received by the court, the diplomatic corps and the *literati* of Berlin. His health, though, much impaired, seemed for a time to improve, and the poet made preparations for undertaking a new task—a life of Goethe. Unhappily destiny interposed its *caveat* and the work was never accomplished. He died at Berlin on the 19th of December, and in March of the following year (1879), the soil of the nation he loved and labored for gave him a resting-place.

G. MERCER ADAM.

THE STORY OF HUMAN PROGRESS:

ARCHÆOLOGICAL RESEARCH, ITS PROGRESS AND METHODS*

THE Archæological Institute has always been a most catholic mother. In her ample lap she has welcomed every kind of fruit which the cornucopia of research has poured out to illustrate the drama of human life. Her aim and object have been, as far as possible, to give a picture of the sometimes gay and sometimes gloomy procession which our race has formed as it has tramped along the avenues of time from the land of mist and cloud to the land of darkness. Every fact, however recorded, whether preserved in words or graven in the universal language with which the ruins of art are enshrined, has been welcome. It has taught the lesson that history means something more than philosophy teaching by examples; it means painting the pictures of the past, and fastening together the broken pieces which have escaped its heavy foot into a mosaic, in which we may see how our fathers lived, as well as what their aims and ideals were,—how far they had progressed in making life tolerable and decorating it with sunshine, as well as unriddling the meaning of the terribly tragic chapters in which we read how mighty empires, in which greatness and glory were combined, were levelled to the ground, their people slaughtered and destroyed, their palaces and temples reduced to dust, and their fertile fields once more occupied by the pelican and the jackal.

It was once the custom to despise some of these lessons. The antiquary was a connoisseur, whose studies were dominated by taste and not by knowledge. To admire, to study, and to review the masterpieces of Greek art; to do the same with the masterpieces of the Italian renaissance—these were his aims, Phidias and Michael Angelo his ideals. It was only when the tide was flowing highest that it was deemed profitable to study it. Hence it is that the collection and the museums gathered in former centuries are so wanting in historic value. They represent the phases of taste as applied to the arts of other days, and the various measures and standards which this change of taste has created, sometimes inspired by nature alone, and sometimes by nature bewigged and bepowdered. We have advanced from this position. We have learned that the ebb as well as the flow of the tide is of supreme interest to us, perhaps of even more interest. Hence, while we admire and rejoice in some masterpiece like the Hermes of Praxiteles, we are constrained to devote a corresponding study to the rude bas-reliefs from the temples of Copan, in Honduras, and the ruder and more homely products of the old stone men.

Archæology is the study of history by its monuments, and not a branch of æsthetics.† Let us by all means guard our taste and accumulate the highest and best; but let us also be eclectic and catholic, and realize that the highest and best of all phases of art are of supreme value; and, further, that what we mean by history is not only the history of kings and armies, of great nobles, and great philosophers, and of the arts they patronized, but also that of the crowd, by whose continuous labor the world has been, and continues to be, subdued, and whose homely and prosaic surroundings have a dramatic interest of their own.

If this be one great lesson which the wider horizon of modern archæological study has taught us, another and an equally important one is that of the continuity of art. What Herbert Spencer and Darwin have pressed upon the students of natural history, we antiquaries learned long before in regard to art, namely, that there are no jerks and jumps in its history, but a continuous

* The recent remarkable achievements of Archæological discovery, particularly in the cradle lands of the race,—now seen to date back some six or seven thousand years before the Christian era,—will, it is thought, commend the following thoughtful and instructive paper to the interest of our readers. It is cast in the form of an address, reviewing the Methods of Archæological Research, and was delivered by Sir Henry Howorth, F. R. S., as president, before the British Archæological Institute at its meeting at Shrewsbury, Shropshire, England. Ed. S. C.

† See the article on Archæology, Prehistoric and Classical, in the Encyclopædia Britannica, Vol. II, page 333.

flow, and not only a continuous flow, but something more. It was formerly the notion that when art took an apparently new departure, and became rejuvenated after a long period of stagnation, it was a spontaneous movement from within. We now know that in almost every case this rejuvenescence was due to contact with some new ideas which came in from the outside. A new graft into the old tree was the real source of better fruit.

Let us take some examples. When the Mongols, who were then masters of China, conquered Persia, they imported great numbers of Persian workmen, and the result was a complete change in the decoration of Chinese porcelain. The vases made by the Moors at Majorca and Valencia were probably the immediate daughters of the art fabrics of Egypt, and were certainly the mothers of Italian majolica. The Japanese are said to have lost their eye for color and form because their old art has changed recently for the worse. They have been, in fact, inoculated with European taste, as they have been flooded with European products. The story is apparently universal.

Again, to take another illustration from natural history, a lesson of these later times in archæology has been that of "survival." We find all kinds of archaic survivals — in our speech, in our fairy stories, in our clothes, everywhere, in fact — crystallized boulders of older strata of human life, which have been preserved accidentally in another matrix, and to those who are willing to read their lesson, reflecting unmistakable features of another time. When we see the Italian peasant going on pilgrimages to different altars of Our Lady to be cured of different human ills, are we not reminded of the similar practices in an age when Venus and her shrines were scattered over the same country, and each shrine had its own Venus, just as each altar had its own "Lady" endowed with different healing powers?

How curious it is to go to a Kermiss in some old Dutch town, such as Middleburg, or Delft, to see the women with their curiously shaped lace caps, and to be told that it is quite possible to distinguish the Roman Catholic families from the Protestant ones, the distinction in the caps having arisen in the fiercer days of the sixteenth century. We may then examine the bags full of curiously shaped and colored cakes sold in the booths, and see the roundabouts and rude swing boats loaded with people, many of them sixty or seventy years old; and then turn to Teniers' great picture at Amsterdam, and see precisely the same cakes and the same roundabouts figured there! Are not the wooden houses colored with red ochre which dot the Chrisenier the very same as were introduced by the Dutch there in the grand old days of the Norwegian herring fishing in the seventh century? Are not the bull fights in Spain direct survivals of the exhibitions in the circus, no doubt introduced everywhere by the Romans, just as Spain was the most essentially Roman of all the colonies?

Have we not our own fossil customs everywhere? The aldermen and the common councillors of London when decked in their state robes might be living in the Plantagenet times, and the "beef-eaters" in the time of Henry VIII. The two ridiculous buttons at the back of our coats and the bands barristers wear are useless relics of once useful garments, the one dating from the time when there was a necessity for buttoning back the flaps of the long coats when George III. was king, and the other are relics of the long collars of King James's time. Are not our judges' wigs directly traceable to the baldness of Louis XIV? These useless things, like the many useless and offensive adjectives used by cabmen and sometimes by schoolboys, are mere survivals of things once usefully put on. The games played by the school children in the gutter preserve the ritual of primeval worship and the social customs of primeval times. Hence it becomes important and interesting not only to trace the origin of things, but also their final departure. Our dictionary makers are the most diligent hunters of the first usage of words. Would it not be wise if they were also to record the last use of the obsolete words, the dying flicker of a living light?

The fact we are referring to has sometimes perverted archæological reasoning. Because the Shetland islanders still use stone lamps and cups, it does not follow, as some have urged, that a Stone Age in Britain is entirely a mistake. It only means, of course, that in remote corners

the very old art has lived on, just as in the names of the old mountains and rivers the language of the earliest inhabitants has frequently been preserved. These touches of poetry in our very prosaic lives are as much fossil relics of an old historical horizon as the fossils which have been found by the German geologists in the far-travelled limestone boulders which strew their country, and belong to an age not directly represented in the solid strata of the district. The lessons we are discussing are prominent in the more recent works on philology, in which lone words and terms foreign to the language have been carefully sifted out, and we have thus been enabled to find not only the origin of many arts and customs, but the stage and culture at which different connected races had arrived at the time when they separated. This we can do by comparing their common names for homely or other objects. The same with folklore, and the same with the rituals of different religions, all of them being among the most conservative institutions.

Archæology is a science which can be profitably studied only on inductive methods. Of this a very notable proof is the discussion on the "origin of man," a subject upon which there was much speculation twenty-five years ago. It has not the same living interest for us now. The fact is we realize that materials are wanting at present to enable us to carry the study very far in this direction, and the newly-fledged hopes of a quarter of a century ago have not fructified. The origin of the human race, so far as archæological research goes, is absolutely beyond our ken, and those who are determined to reach some result in this direction must go to the geologists for their facts and arguments. The moral for the archæological vista is this: We can take up the various specialized and elaborated civilizations which men have produced and trace them up to simpler and less specialized forms. We can separate the tangle created by their mutual influence upon each other, and trace the enormous changes due to the gradual introduction of new ideas and new processes, of new weapons and new tools. We can trace the complicated pedigree until we reach an age when all men used very similar materials and had very similar arts. The cramping influence of having to use these often stubborn materials compelled a monotony of form and of ornament which is in itself bewildering.

Eventually we reach a stage where it is most difficult to discriminate among races or their characteristics by their art alone. For example, the polished stone axes left by the Caribs, those found in some parts of Europe and those found in some parts of eastern Asia, are almost indistinguishable. Yet, how widely separated these races are in every respect! We may thus be only too easily deceived in supposing that we are getting nearer to the solution of the problem of the origin of man when our goal is the inevitable one, that with his primitive weapons primitive man in many latitudes was constrained to surround himself with very similiar surroundings.

A corrective to this is very speedily and interestingly reached when we turn to other fields of research, such as language and mythology, and physical constitution. We can trace back the languages of Egypt, of Babylonia, of India, and China for a long distance beyond the occurrence of regular annals in those countries — back, in fact, to the Stone Age in each, and similarly with the mythology, and the result is that, instead of apparently reaching a common origin and common elements in them, the gap between them seems to get wider as we go further back, until we have to confess that if there was a common fountain to the various streams it must have been at a period so remote that we have no material at present by which to trace them to it. The men who wrote the Book of the Dead, those who wrote the Epic of Sargon the First, those who wrote the Vedas, and those who wrote the Chinese classics, if they were descended, as we believe, from common parents, must have been isolated from each other for a long period in order to become so differentiated at such an early date.

If we range further afield we shall find the same lesson meeting us everywhere. Among the Indians of North and South America there are, it is said, ninety languages spoken which are unintelligible to each other. The same problem meets us in the Caucasus, in Siberia, in Indo-China, and elsewhere. The existence of these languages is a perpetual

warning to us to be careful of dogmatizing. How can we explain them except by postulating a long period, during which they have been gradually diverging from each other? We cannot estimate this period by any scale or measure. When we compare Icelandic with Norwegian, and remember how long ago it is since Iceland was colonized — when we compare the Mongol language, still spoken by the Buriats in Mongolia, with the language of the letters of the Mongol Khans written to the French kings in the thirteenth century, we gain a measure of the slowness with which these changes sometimes accrue. If it has taken sixteen centuries to convert Latin into the various Roman languages, how long has it taken for the diversion of the various Aryan forms of speech from one original language, and how much longer to converge the Aryan, Semitic, and other families of language upon a common mother?

The question is full of romantic difficulty, and assuredly we are a long way from any satisfactory answer to it. The evidence of language and mythology is supplemented and confirmed by that of the physical features of our race — features which seem to be so conservative and so difficult to alter. If we examine the earliest human pictures which have been preserved in the tombs of Egypt we shall find representatives of the various races which then bordered the valley of the Nile, and we shall find that in features and physique they are undistinguishable from the tribes still occupying the same districts. The Negro, the Nubian, the Coptic Fellaheen, the Semitic inhabitants of Palestine and Arabia, are there pictured as we know them now.

The earliest monuments of Babylonia similarly discriminate clearly the various types of men in Mesopotamia. It is so, also, with the early monuments of China, of India, of Mexico, of Peru, and of the borders of the Mediterranean, and this evidence of the monuments is supported by the shapes and contours of the skulls which have been found in the earliest graves, and which show not merely sporadic variation, but variation affecting great classes. All this assuredly requires us to postulate a long period during which fresh changes were incubating and were being carried forward. We have no means of knowing how long this was. We can only very naturally conclude that since so little change has taken place during the last four thousand years in the languages, the customs, and physical features of so many different races, we must go back a long way if we are to explain the differences as they exist.

We have no chronology of any kind for these misty regions. Dates entirely fail us. In Egypt and in Babylonia anything like positive chronological data fail about 2500 B. C., while, as we know, the Bible dates are, before a certain period, not only based upon those of Babylonia, but they have been preserved in an entirely different shape in the Masoretic, the Samaritan, and the Septuagint versions, and there is no means of rectifying them. All we can say is that the Masoretic numbers, upon which Archbishop Ussher's chronology was based, and which was the basis of the calculation in the margins of our Bibles, are the least trustworthy of all, and can be shown to be sophisticated and altered. In the work "The Mammoth and the Flood," the present writer claims to have shown that all the evidences we possess — geological, palæontological, and archæological — converges with singular force upon one conclusion, namely, that at the verge of human history there was a great and widespread catastrophe, which overwhelmed a large part of the temperate regions of the earth and which caused great distruction of men and animals.

This widespread catastrophe has left its mark upon the traditions of many and widely-scattered peoples. It possibly accounts for the isolation of many races in our own day, notably in districts without great natural frontiers, which isolation is due, in all probability, to the destruction of all intervening links between the various human colonies which survived.

It is a remarkable proof of this catastrophe that whereas man is the most elastic of creatures in his capacity for facing and overcoming difficulties, there is, nevertheless, an absolute gap in his history in large areas in Europe unbridged by any remains or by any evidence. How are we to explain this? Once man has occupied the ground he is not likely to abandon it entirely and suddenly. Wherever we find one set of men driving out and superseding another, we have evidence of gradual change (of

overlapping). In the hill forts of the English county of Dorset we have Roman remains mixed with those of Britons. In the Kentish cemeteries we have Roman remains mixed with Saxon. In the case before us, however, it is not only human art which shows a gap, but a whole fauna suddenly changes. Not a single mammoth or a rhinoceros has ever occurred with the remains of a domesticated animal. Since there are no traces of a transition, it is clear that one set of men and animals did not absorb the other. This sudden hiatus and gap means, to my mind, the occurrence of some sudden and widespread catastrophe which desolated a wide area and destroyed its living creatures in great numbers, and the recolonization of the wasted area by migration from elsewhere. To this great catastrophe the conditions of mankind go back, as do the geological reference we can collect. It forms the great divide in early human history.

We must not, however, be misled. Some hasty writers have argued as if human beings were quite different in kind before and after the divide. I see no evidence whatever of this. The human skulls found with the remains of extinct animals by Lund in the caverns of Brazil have all the characters of Indian skulls, while those found with the extinct animals in Europe have the characters of European skulls, thus showing that at this period the native races of America and of Europe had already been differentiated; and it is extremely probable that the so-called paleolithic, or the antediluvial men of Europe did not belong to one race, but to several races. Those who find certain resemblances to simian skulls in those of antediluvial man overlook the power of drawing shown in the etchings of animals on pieces of bone found in the French caves, which is quite unmatched in after-times until we reach a much later period, while the harpoons, the needles, etc., are most skilfully fashioned.

Whether the simian origin of man be a factor or not, it is clear we have no evidence in archæology as yet to bridge the gap. If we want a key to the whole position, we must turn our backs upon civilized man and explore the fertile fields of ethnography and the multiform types which we find among savage and semi-savage races. Many of these have survived from the era before the great catastrophe, which did not in fact affect the tropics. In these latitudes we can find abundant material to study, showing how man with very rude tools fashioned for himself very respectable surroundings. These various tribes of savages are generally ignored when we study history and archæology. No greater mistake could be made. Assuredly they present us with survivals on a great scale, by which we can measure and test the phases of human progress in its earlier stages, and some time, perhaps, we may be able to get them all into one pedigree, and show how a real continuity combines them all. Two lessons of great moment we may learn from them. One is, that all these varieties of language, of ornament, of dress, must have taken a very long time to develop; and, secondly, when we come into actual contact with them we are struck by the further fact that they are desperately conservative.

The so-called mug money which marks one of the very early chapters of our archæological history still survives in northeastern Africa. The ornaments and the customs of ancient Egypt may be still found living in western Soudan and among the tribes of Ashanti, while, if we turn to Australia and Tasmania, we shall find human arts still in their very infancy, and, so far as we know and can judge, the arts of these races have remained unchanged and unaltered since those primitive times, when the Australians first introduced the dog into Australia, which means, when the Australian animals were still living, while we shall find among the very backward Bushmen and Eskimos a power of drawing animals, etc., comparable with that of the cave men, and languages remarkable for their structure and capacity.

A third lesson which we learn is, that it is quite possible, and in fact an everyday occurrence, for two civilizations which have reached very different stages to coexist alongside each other contemporaneously in the same area. The Australian and the Englishman live alongside each other, as the Lapp and the Norwegian; nay, to come nearer home, as the gypsy and the sedentary Oxford professor; and we are led from this fact to the induction which has been too often forgotten or overlooked, that the same thing must always have been. We talk of a Stone age, of a Bronze age,

and of an Iron age, and these are excellent terms when we apply them to some particular area like Scandinavia, to which they were first applied; but they are misleading when universally applied. Many savages are still living, or were quite recently, in the Stone age, the Shell age, or the Wooden age, like the Australians, the Marquesas Islanders, and the Indians of the Amazons, while alongside of them were living the emigrants from Europe, who were not only living in the Iron age, but had learned to harness steam to iron, and to multiply human labor tenfold.

Not only is this so, but it is obvious in such cases that there may be a great jump in civilization from a very low to a very high step on the ladder without the necessity, or the possibility even, of intermediate steps. A Bronze age or a Copper age is not at all unlikely to intervene between the hewers of rude stones or of polished stones in the Pacific and in many parts of America and their adoption of iron; and, in fact, it may be said that the stage we sometimes associate with the paleolithic man (wrongly, as I think), namely, that in which the Tasmanians and Australians lately lived, may be immediatly followed by an Iron age. I say wrongly, because we cannot argue that the men who lived in our prehistoric caves and were contemporaries of the mammoth, whose portrait they scratched on ivory, were the same race as the low type of men discovered in Tasmania.

Let us now apply this lesson a little more concretely to the complicated story Story of Human Progress. If we take our archæological telescope and look back through the avenues of time, we shall reach a period when the great civilizations of the world were still incubating, and when in Europe, in north Africa, and in Asia, the many scattered tribes were living very much as we can see tribes living now in savage countries, some by hunting, some by fishing, and some, no doubt, leading a pastoral life. This stage in Europe and its borders is marked archæologically by what we call the paleolithic or antediluvian man. Some have compared him with the Eskimo, because the Eskimo, like him, has artistic instincts and can draw well, and because his surroundings are supposed to have been of an Arctic character.

All this is very doubtful and, in fact, misleading. So far as we know, the cave man of Europe was completely exterminated, as his companions, the mammoth and the hairy rhinoceros, were, and has left no descendants. His remains as found in the caves are cased with stalagmite, which effectually separates them from their successors. The immigrants who succeeded them are recognized by their long, narrow skulls, by their employing domesticated animals and cultivated plants, and by their burying their dead in long barrows. Whence they came we cannot positively say, but we may reasonably conjecture it was from some country where the animals and plants just named were indigenous in the wild state. In their graves in Britain no metal objects have been found, no tangled or barbed arrowheads, while the pottery is of the rudest character, marked by cylindrical shapes.

In one respect these long mounds present us with a puzzle. We can hardly doubt that among barbarous races few things are more likely to have been closely studied and more important than the ritual of burial, and yet we find the practices of burial and of cremation both in vogue. It has been thought that the two practices were, in fact, contemporary from the commencement. In this I cannot agree. In the south of England burial was almost universal among the long barrow men. In Scotland, on the contrary, it was cremation; but a writer has shown that even there burial seems to have preceded burning, and it seems to me that burning the dead bodies was distinctly an innovation introduced by the men who had succeeded those with the long heads, and that originally it was unknown among these men.

Again, there is another curious distinction, which is apparently a superficial one. When stone was not to be had the bodies were laid in the ground in a more or less crouching attitude and covered in. Otherwise chambers were built up of boulders or other rough stones, which were approached by long galleries open to the outside, apparently simulating underground dwellings, in which whole families or clans were buried. These again were supplanted, when the new men with round heads came in, by stone boxes or cists closed all around, the introduction of which was, in general,

coincident with that of burning, although there was undoubtedly some overlapping. Who, then, were these long-headed men? The early long-headed race of Britain has, according to fair evidence, left its trace in Europe in the long-headed, dark-skinned, black-haired Basques, and in Britain itself they seem to have survived in the Silurians of Glamorganshire (described by the Roman writers), and in the small black-haired people of South Wales and parts of Ireland.

Traces of the Basque language are said to be found in the Celtic languages, but this particular branch of the field has been hitherto little explored, nor have the local place names in those districts where the race may be supposed to have survived. Here, then, we seem to have a clue which points to the men with the long heads having come from the southwest. The Basques have their nearest relations in North Africa, where a race which buried and did not burn its dead once occupied the country, whose remains are still to be found among the Berbers and the Kabyles of the Atlas range and among the Guanches of the Canary Islands. And these races of the Atlas take us on again to the valley of the Nile, where the early Egyptians are now recognized to have had close relations of blood, etc., with them, and who were, as you know, almost fanatically devoted to the practice of burial, as contrasted with burning in disposing of their dead.

In this behalf it is curious to remember the distribution of the so-called cromlechs, which are merely chambered tombs of another form. They are found all round the northern part of Africa, in Spain in the maritime parts of Gaul, and all over Britain, where they have not been displaced by the plough and harrow. They abound in Holland and occur again in Scandinavia, specimens of their primitive stock having migrated from west to east in Europe along the seaboard. This line of migration leads us to the Nile valley as a goal, and it seems to some of us that the earliest inhabitants of that valley were first cousins of our long barrow men. There, under favorable conditions of a pure climate and access to the necessary tools and weapons of culture, there developed a race which, although unacquainted with metals, produced a wonderful culture — that of the Egyptians of the old empire.

We have as yet found no traces of a beginning of this culture on the spot, and until quite recently, when Professor Petrie has made some remarkable discoveries at Coptos, which may throw some light on this issue, we seem to have in the monuments of the fourth and fifth dynasty every kind of excellence we associate with Egyptian art fully developed, including its hieroglyphical writing, its strange mythology, etc., and all the while Egypt was still in what the Scandinavian antiquaries describe as the Stone age.

Whether this art was imported with the race which developed it in the Nile valley, or was entirely indigenous, we do not know. It may be that it was the discovery of the ancestors of the tribes who are now represented by the Bisharins, Hadendowahs, and other wild tribes of the Eastern Soudan, or by the Berbers of the Atlas range, who border the Nile valley on either hand, and must have done so for a very long period. One thing seems clear, that for a very considerable period the art of the Nile valley was isolated, and does not seem to have affected that of its neighbors. To us this art is supremely interesting, because we can trace its progress step by step through manifold vicissitudes for four thousand years.

Let us now return again to Early Britain. The long-headed people here were displaced very largely by a race with round heads, who burned their dead and put their ashes in beautifully constructed urns, and then deposited them in stone cists or boxes in round or saucer-shaped mounds and not in long barrows. As we have said, there was considerable overlapping between them and their predecessors, who adopted in some cases their customs, including that of burying in round mounds or barrows. The shape of the skulls of these new men shows us what a profound racial difference there must have been between them and their predecessors. They apparently came from another direction, and with different surroundings. So far as we know, they were the first wave of that migration of tribes from the east which have successively followed each other in Europe, and are represented by the earlier Celts in central and southern France, and large parts of Spain, and by the Irish and Scottish Gaels, just as their art-remains

proved the round-headed folk to have mingled with their predecessors, the Basques. If we follow our maps eastward, and track the steps of those races who burned their dead, we shall find them linked step by step — if not by race by a certain relationship in their arts — to the early dwellers in Mesopotamia. There a similar development to that we all know so well in the Nile valley, and likewise in the Stone age of culture, took place in the valleys of the Euphrates and the Tigris.

Here, however, we seem to have evidence that the culture was not home-grown, but there are reasons for believing that the men who founded the earliest known communications with Chaldea brought with them the arts by which we know them from the Elamitish mountains to the east, whence they seem to have sent colonies westward into Mesopotamia and eastward into China. This curious and most interesting induction is one of the most important discoveries of recent years. It enables us to link the culture of the farthest east to that of the west, and it also enables us to conclude that the arts are not the peculiar heritage of any one race, for here we seem to be compelled to admit that the foundation of that culture which we call Aryan or Indo-European is really to be traced to the now despised Turks and Finnish races. It was a race very nearly akin to the Turks and Finns which certainly invented the cuneiform writing, and apparently developed the earliest religious system in Chaldea. From this race it was directly learned by the Semitic races, whose original home was Arabia, and whose enterprise and vigor distributed them far and wide. One thing we must remember, that so far as our present evidence goes, the arts of Babylonia were as different from those of the Nile valley as were the language, mythology, and the appearance of the people.

These Semitic peoples founded the successive kingdoms of Babylonia and Assyria, but it was the Phœnicians who were chiefly instrumental in multiplying and distributing the wares which the older men of Mesopotamia had made. They were to be found trading and trafficking everywhere from far-off Britain to far-off Thule, and still farther to that land of mist and snow where the griffons were supposed to guard the gold deposits of Siberia. Their settlements and trading ports were to be found all over the Mediterranean. These same Phœnicians were also great metallurgists, and if not the discoverers of bronze, which added so much to the resources of the early craftsman, they were so far as we know the great distributors of the knowledge of the making and also of the materials of bronze.

Let us revert once more to northern Europe, and notably to Britain. It was during its occupation by round-headed people that the use of bronze was first introduced. Gold was apparently their own discovery, but bronze, I believe, was an imported art, and had nothing to do with the introduction of a new race. The bronze workers, as we know from the numerous hoards which have occurred, and also from the numerous moulds which have been found, were travelling tinkers and metallurgists, such as the metal workers of Finland still are, and as the mediæval goldsmiths in Scotland were. The weapons, ornaments, and tools are of the same type, differing in slight details only from one end of Europe to the other, and showing that the art was spread over a wide area occupied by many races, and it seems to have spread from the Mediterranean lands, perhaps by the agency of those traders who took Baltic amber to Greece and Italy, and who in the first instance were probably the Phœnicians.

It is curious that this bronze culture should have advanced to very different stages of style and elaboration in different areas. In Spain it advanced only to a small degree, as we may learn from the explorations of the brothers Siret; in England and France considerably farther; in Scandinavia and Hungary farther still, and I would suggest as an explanation that the reason is that in Spain and the western countries bronze was displaced by iron at an earlier date. Thus, while in Scandinavia we have no reason to suppose that iron was used until about the Christian era, in Britain it must have been used several centuries earlier. Thus the later and more developed bronze culture of Denmark and Hungary corresponded in age and was synchronous with the earlier use of iron in Britain, and probably also in Gaul and Spain, and hence it represents a later and higher art.

(TO BE CONCLUDED NEXT MONTH).

SELF CULTURE

A MAGAZINE OF KNOWLEDGE

With Departments Devoted to the Interests of The Home University League.

Every person has two educations; one which he receives from others, and one, more important, which he gives to himself.—GIBBON.

VOL. V SEPTEMBER, 1897 NO. 6

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MONTGOMERY B. GIBBS, BUSINESS MANAGER

KLONDYKE AND THE GOLD FEVER

The rush has at once set in for the Klondyke, despite all warnings in regard to the lateness of the season, the difficulties and risks of transportation, and the rigors of the winter when the gold-seeker shall have reached his destination. But considerations of prudence do not usually weigh with the adventurer of fortune. All he cares to know is the location where treasure may be found, as he fondly thinks, for the picking up; and if there are difficulties in the path these he confidently assures himself will be overborne, whether the objective point be the recesses of a distant continent or the rim of the arctic circle. The rush to the new Eldorado repeats many of the incidents connected with the discovery of gold at Cariboo and at Ballarat, near Melbourne. Nor, from the indications that have already come to light of the mineral wealth of the upper waters of the Yukon, will the results be less astonishing than were those forty years ago in California and Australia. If appearances, however, prove deceptive, the myriads who are now throwing themselves recklessly into the new goldfields will fare badly indeed, since they will not be able, as were the Californians and Australians, to fall back, as agriculturists and ranchmen, upon the land for support, the district appearing to be unfit for the colonizing immigrant and settler. This is one of the drawbacks of the present arctic exodus, and in view of the extremes of the Klondyke climate, which ranges from 60° below zero in winter to 103° above it in the shade of summer, it is an appalling one.

To the miner, in the meantime, the chief difficulty is in getting to the region. The bulk of American migration to it appears to be entering by way of Juneau and Lynn Inlet to Dyea, thence by the Chilcoot, or, preferably, by the White Pass (since the latter is at a lower elevation), to the lake and river courses which lead to the Lewes River, and by the latter to the junction of the Klondyke with the Yukon. The route, from all accounts, is an extremely hazardous, as well as tedious, one, as all camp outfit, with everything edible, has to be carried into the district. From the passes to be crossed on the way, we may hear of many harrowing mishaps, and, later on, doubtless, many a pitiful tale of distress will come from the miners' wintering camps. When the Canadian Government completes its organization of the territory and constructs roads to it, the more serious difficulties at present to be encountered (maugre the climate and the mosquitoes) will no doubt be dissipated. The pioneers, meantime, will have to endure the brunt of the toil and discomfort, though they will have the advantage of being early on the spot to make choice of and secure the most promising claims.

The wealth of the region, so far as tapped, appears to be in the "gulches" that seam the valleys lying between what is known as Forty Mile and Sixty Mile Creeks, or within two degrees easterly of the 141st meridian, which forms the international boundary between Alaska and the Canadian Northwest Territories. But geologists say that the conditions are favorable to the finding of gold, and that not only in pockets, but in rich quartz veins traceable up to the mother-lode, throughout the whole district, and especially from the sixty-sixth N. parallel southward to Lynn Inlet, and from the headwaters of the Stikeen River westward to Bering Sea. We should doubt what is said about tracing up the "mother-lode," since the action of glaciers through æons of time and the wearing down of the surface by heavy snow and rainfalls, must long ere this have crushed and carried off all but the loose frayings of the precious metal, now probably widely distributed over the bottom of the gravel beds in the ravines into which the ore has been washed. That these mere deposits are rich, there appears however to be no question, though no experienced

miner will deceive himself with the expectation that they can be amassed without hardship and toil.

A word may perhaps be permitted us on the necessity for the utmost consideration on the part of the two governments interested in the territory and its approaches. Let there be as little as possible of an international embargo or impost upon those entering and operating in the district! We shall offend, we trust, no susceptibilities if we say that, in such a region, labor should be unvexed by any tax or other hindrance from reaping its hard-earned reward. The Klondyke being in British possessions, the Canadian authorities are of course strictly within their right in levying a mining royalty, though it may be questioned whether the levy (ten per cent. on all gold taken out when the output is less than $500 per week, and twenty per cent. when the output exceeds that sum) is not exorbitant. Nor can objection, we think, fairly be taken to the reservation by the Dominion Government of alternate sections of the mining lands, since the expense of policing the region should reasonably come from the mining royalties, while the yield from the reservations will be needed to pay the cost of constructing and maintaining the communications between civilization and the auriferous outpost.

THE ASSASSINATION OF CANOVAS

Once more anarchist frenzy vilely manifests itself in assassination. Murder as an instrument of reform is no less barbarous than is lynching when resort is had to it to restrain lust; while if civilization is to exist neither can be tolerated as a mode of vengeance. The act of the assassin which has deprived Spain of her really able prime minister will, we need hardly say, do little for the political cause the wretched murderer represents. Again and again has history shown that human progress is never helped by an act of foul crime. Nor does socialistic revolution commend itself to any but a madman's reason, if its aim is to make administration impossible by any public man worthy to be entrusted with the helm of the State, and thus reduce nationality to tribalism and society to its original barbarous elements. In Señor Canovas' case, there are special circumstances that stamp his removal by murder as a deed of the blackest ingratitude and the vilest guilt. In the present grave peril of Spain, his seemed the only hand capable of controlling the rival factions and directing the affairs of the State. True, in the main, it was through his instrumentality that the Bourbons were restored to the Spanish throne, but it was he who has stood between the people and despotism, and to him the nation is indebted for universal suffrage. Still less is sanity, not to speak of patriotism, shown, in depriving the country so foully of the services of a statesman whose intellectual and moral, as well as political, gifts were an honor to it. But moral and intellectual worth, it would seem, goes for nothing with the anarchist, if, indeed, it does not make its possessor, especially when found in the high places of the earth, a more conspicuous object of political and class hatred. The repeated attempts of these fanged reptiles in human form to bring about chaos in the world will make men of ability chary of accepting positions of great public trust and responsibility; and in such an event to whom shall the nations severally turn save to iron-nerved despots to wield power in the State?

NATIONAL BENEFACTORS

As the nation develops in wealth and culture, one of the laudable characteristics of the time is to seek to pay honor to its great benefactors. This is now being done in many ways, chiefly, however, by erecting monuments to their memory, or by endowing institutions perpetuating their honored names. One of the latest of these movements is a hearty, though tardy, design to commemorate, by a statue, museum and public recreation grounds, at Cooperstown, N. Y., the work and genius of Fenimore Cooper, the novelist. At Lake Otsego, on Mount Vision, the romantic interest of the place made famous by the "Pioneers" is preserved by a columned figure of "Natty" and his dog, gazing over the waters of the lake; but with this exception the home of Cooper is, we believe, destitute of any memorial of one of the most interesting figures in the history of American letters and perhaps the greatest benefactor of American youth. The author of the inimitable "Leatherstocking Tales," we

need hardly premise, is in no need of being saved from oblivion or neglect by this or by many a generation to come of the American people, or indeed of any of the English-speaking race.

To the youthful reader at least of his books, dear beyond measure must continue to be Cooper's memory, whatever effigies of the author are set up or fail to be set up, or whatever is done in his native place to gather and preserve the relics identified with the man, with his home, his career, or his work. But national pride in one who, whatever his vanities or faults of temper and judgment, has so greatly enriched the imaginative literature of his country is a factor that may pardonably be exercised for mere gratitude's sake, and to testify to the appreciation by his countrymen of his varied and wholesome gifts, as a master of woodcraft and an unrivalled painter of forest scenes, a fascinating delineator of Indian character, and an incomparable writer of thrilling sea-tales.

Apart from the charm of his close and telling style, the exquisite force of his pictures of Nature, the keen analysis of human character which his pages offer, and the splendid flow of his incidents and descriptions,—observes a recent English critic—Cooper's marvellous pen has preserved for the world a nation which is as surely perishing from the face of the earth as the bisons which shared with them the prairie and the swamp. It may be that he exaggerated both the virtues and the vices of the Red Man. It may be that mature judgment and later experiences of the Redskins will force the reluctant adult to believe that what he adored as a lad in "Uncas" and "Chingachgook" was poetry rather than fact. But what books they were! How full were their glorious pages of the fresh air and daring life of the wilderness! How rich was the woodcraft, how manly and stirring the adventure, how adroit the plots, how absorbing the mixture of love and war and out-of-door existence in these delicious volumes, wherein the Pathfinder's rifle never cracked in vain; and brave men were never without some last and redeeming resource!

Moreover, continues the same authority, though it has not been much or generally dwelt upon, Fenimore Cooper was assuredly one of the very greatest and most picturesque writers about the sea. There is nothing in Marryat, nothing in Clark Russell, nothing in Chamier, or "Tom Cringle's Log," or the "Cruise of the Midge," to beat, for good and true seamanship, his account of the working of the frigate out of the narrows in the opening chapters of "The Pilot," and some among his pen-pictures describing the navigation of the Great Lakes are also faultless. To compare his work at its best with much that passes for good fiction now-a-days is to contrast Michael Angelo with itinerant modellers in plaster of Paris. America does well to be proud of him. There never will arise another to feel as did Fenimore Cooper the mystery of the primeval forest, the glory of the boundless prairie, the freedom of the lake and the river, and the delights of that open-air life wherein the human senses become quickened, and the happy blood purified, until man tastes again the lost joys of his animal body.

TRADE AND THE TARIFF

The tariff, after long and protracted manipulation, has at length escaped from the legislators, and the trade of the country is suffered to resume its much-hindered operations. By the Dingley Act, the import trade is more heavily loaded than ever with taxation, and the screw has had another and more vigorous wrench in tightening up the leaks in the revenue caused by the evasion of customs, in the case of wealthy tourists returning from Europe. The latter policy, though pretty rough-shod, we have no wish to quarrel with, though we dislike all stand-and-deliver methods of revenue-collecting, which savor of the footpad. Yet it is well known that the evasion of customs duties by society returning from the pleasure capitals abroad has hitherto been a giant evil, and has involved no little loss of revenue. What, from our reasonable free-trade point of view, we resent, is the heightened triumph which Protection wins, by the grace of ringsters and monopolists and their coerced or corrupt tools in the Legislature, since no tariff such as the Dingley measure is framed in other than selfish interests, and not in those of the nation broadly and of the people. We shall of course be told that the needs of the national treasury at present justify a high revenue-producing tariff. That may be granted, though it is curious to note that Protectionists, while telling us this, always fail to explain how it is that the necessity for a large income invariably keeps pace with the demands of their game.

The one gratifying fact in the whole business, so far as commerce is concerned, is that the tariff-tinkering is for the present over and the business of the country is relieved of a state of semi-paralysis and deadlock. Already, in spite of the fostering of trusts and monopolies, which

we owe to the Dingley measure, industry has revived and there is a general advance towards prosperity. The farmer, too, though, as usual, he is forgotten to be benefited by the tariff, has his countenance brightened by the sun of reviving times, for the price of wheat keeps rising, and the crop-prospects for the coming season are more than usually good. Moreover, as he gets rich again, despite the fall in silver, in which he was asked to put his trust, he gets rich in coin worth a hundred, rather than forty-three or even fifty-three, cents in the dollar.

To restrain jubilation at the passing of a high tariff, grave doubts exist, in the minds of even out-and-out Protectionists, as to the measure curing the evils which it was designed to remedy. These fears do not surprise us, since we have yet to see a high tariff which in its practical working does not defeat expectation. Though its exactions are higher, the volume of importations invariably diminishes, while as an exporting nation ourselves we have to lay our account with retaliation in foreign markets. Nor will labor, unless we are greatly mistaken, find its hopes realized in a period of high wages: it will fare well indeed if there are no further closing down of factories; and yet we would like to see a general rise in wages, which, besides giving security to the commonwealth, brings public happiness and, to the toiler, contentment with his otherwise hard lot. True wisdom, however, lies in economy, both in the individual and in the nation.

That economy is not the object of solicitude with the nation's legislators we need hardly point out. In the late Session it seems to have been less than ever the concern alike of Senators and Representatives; while the tariff, almost throughout, has been shaped in the exclusive interest, not of the people at large, but of manufacturers and trusts. So flagrantly has this been the case in the present Congress, that retrenchment has been deliberately set aside and extravagant appropriations encouraged, that the national tax-imposts may swell the already inordinate gains of corporate organizations. The fiscal policy of the country seems now to be entirely shaped by the trusts, and the end of independent and honest legislation apparently fast approaches.

AN ENGLISHMAN'S BEQUEST TO THE BRITISH NATION

Art in London, thanks to the munificence of one of her public-spirited citizens, has a new National Gallery, which has been erected at a cost of more than half a million dollars, on the site of what used to be known as the Millbank Prison. The project of transforming a reformatory prison into a temple of Art, the home already of some of the finest national paintings, was the happy idea of a Mr. Henry Tate, an earnest and cultured lover of Art, who donated the building and its valuable contents to the British nation, for the encouragement and development of native Art, and, it is added—under the influence, doubtless, of Queen Victoria's Jubilee—as "a thank-offering for a prosperous business career of sixty years." The new gallery is enriched at the same time by the gift of about twenty important paintings from the easel of Mr. George F. Watts, R. A., and by the masterpieces donated to the nation by the Chantrey Bequest, including notable canvases by the late Lord Leighton and Sir John Millais, by Sir Edward Poynter, the present President of the Royal Academy, by Mr. Luke Fildes, Mr. Herkomer, Mr. Orchardson, and other famous English artists. The Government has pledged itself to maintain the institution, and the trustees of the National Gallery in Trafalgar Square have undertaken to manage it. Mr. Tate, moreover, is to extend forthwith the capacities of this princely palace of Art, which, thanks to the donor's liberality, happily opens a new and attractive home for the national housing of the finest examples of British paintings. In his generous gift, Mr. Tate sets a noble example to possessors of wealth, earned by industry and intelligence, to make some suitable return to the nation that has given him his riches, in a gift of the highest educational and æsthetic value to the people.

* * *

CHINESE VERSUS INDIAN TEAS

Time brings its revolutions in commerce as in everything else. Only three years ago, in England, Chinese teas were almost wholly imported, and used to fetch, for good brands, about 60 cts. a pound. The importation, moreover, was enormous. Now all that is changed, and the English

import their teas from India, chiefly from the damp rich soil of Assam and Ceylon, where the commodity is produced in perfection. To-day the British import of the Indian leaf exceeds annually a hundred and twenty million pounds, and the price of its old Chinese rival has fallen from 60 cts. to under 10 cts. a pound—the latter figure being the bonding price, without the duty. Thus, in another way, does English enterprise extract millions from her Indian possessions to enrich the United Kingdom, while there is quickened in the Indian and Cinghalese tea-gardens an activity, with its accompanying rich profits, which was wont to be seen in the land of the Mongol, in the fair regions where bloom the precious but discarded Pekoe and Souchong. With the exclusion from the English markets of the once dominant leaf of the Celestial Empire, the shipping trade has also been diverted. The fast clipper sailing ships, with their beautiful lines and white wings, which used to race across from Chinese tea-ports with the speed of the trade-winds or monsoons, are now to be seen on other waters.

* * *

ELECTRICITY FROM GARBAGE

The achievements of electrical science not only augment our wonder, but become active agents in contributing to the necessities and comforts of our daily life. The latest novelty in this age of scientific marvels is the utilization of garbage, consisting not only of house-refuse but of the sweepings of the streets, in the production of electricity. In Shoreditch, a London municipality, the problem of how to dispose of the town's refuse dirt has been interestingly solved by collecting and burning it, the heat from the furnace cells in the crematory process being made to generate steam for driving engines in the manufacture of electric light. The example of Shoreditch may well be imitated by municipal bodies on this side the Atlantic, since the success of the project has been amply demonstrated, while profit has ensued to the corporation in saving the cost of carting away the refuse and utilizing it to run a complete electrical plant. The plan indeed has worked so well in London that the gathering and disposing of garbage, which hitherto had been a heavy expense to the municipality, has now became a large source of revenue. From a sanitary point of view the plan has additional advantages, since the burning of the garbage, instead of dumping it where it will contaminate drinking water or otherwise be a menace to life, is a vital matter in contributing to the city's health.

Commenting upon the enterprise, a correspondent in the New York "Nation" observes, that the complete scientific description of the undertaking naturally belongs to an engineering journal. But the main outlines of the scheme, he adds, are well within easy grasp.

"Between fifty and sixty tons of refuse," he goes on to say, "are brought to the Dust Destructor daily, and tipped from the carts into lifts. These are moved by electricity up to the tipping platform, run on rails, and emptied into bins from which the furnaces are fed. There are twelve destructor cells, or furnaces, with the large heating area of twenty-five square feet each, and also six water-tube boilers at the side, each with 1,300 square feet of heating surface. Now it is evident that dust and refuse will not burn as coal burns. To coax it to burn, there are motor-driven fans which cause a strong current of air to circulate. Each fan makes from 500 to 700 revolutions per minute. The hot air is drawn by suction from the top of the engine-house, forced into an air-duct by the fans, and goes underneath the cells and boilers to compel the refuse to burn. The air-supply is carefully regulated by valves, so that in case of coal or other easily burning fuel being used, it can be cut off. It was evident that dust is collected and preferably burned in the day-time; whereas night is the great time for using electricity. Dust destruction continues day and night at Shoreditch, twelve men stoking in three shifts of eight hours each, four to a shift. The question was, how to save up the steam generated in the day-time for use at night. This has been achieved by the Druitt Halpin thermal storage system, by which steam passes into a cylinder and is mixed with a small quantity of cold water from the feed-pumps. This steam is supplied to boilers in connection with the dynamos, and by this arrangement the boilers evaporate one-third more steam than would be the case if they were connected with the water-mains.

"There remains to consider the waste product of the refuse, which is reduced to about 30 per cent. of its original bulk. At present it is given away; but there is little doubt that a market will arise for it. It can be ground down to make good sand for mortar of excellent quality for bricks, for artificial paving-stone, concrete, and also for drainage and road-making before macadam is laid down. The Shoreditch vestry are at present considering the advisability of grinding the ash and using or selling it themselves as a subsidiary industry. There is absolutely no coal used in the destructor cells, nothing but refuse. The vestry clerk calculates that there will be an annual saving of $7,500."

EVENTS OF THE MONTH

Tuesday, July 13.—The number of silver dollars coined at the mints during the last fiscal year was 21,203,701....Two warships will be sent to Hawaii to relieve the *Philadelphia* and *Marion*....The convention of the national league of Republican clubs was opened in Detroit, Mich....Turkey has dispatched an ultimatum to Persia demanding the withdrawal of Persian troops from Turkish territory, near Kerbeta; Russia is believed to be behind Persia ....Queen Victoria received 180 members of the Pan-Anglican conference at Windsor castle.

Wednesday, July 14.—President McKinley has suspended the operation of ex-President Cleveland's order consolidating the pension agencies of the country and reducing their number to nine from eighteen....The anniversary of the fall of the Bastile was celebrated in France ....Mr. and Mrs. Whitelaw Reid entertained a large company at luncheon in London....It is said that the report of fighting at Candia between British troops and Bashi Bazouks is without foundation....The report that the Turks are constructing a military road in one of the passes of Mount Othrys has been confirmed.

Thursday, July 15.—The Transmississippi congress met at Salt Lake, Utah; William J. Bryan made a speech....A joint proposal of bimetallism was presented to Great Britain on behalf of the United States and France; the British cabinet will give its answer at a subsequent conference....It was announced in London that a conference will be held in Washington in the autumn to consider the Bering sea seal question, and that Great Britain, Russia, Japan, and the United States will be represented....A dispatch from Paris to a London news agency says that inquiry at the United States embassy confirms a rumor that Spain and Japan have arranged an offensive alliance against the United States for the mutual protection of Cuba and Hawaii.

Friday, July 16.—The Transmississippi congress, at Salt Lake, adopted resolutions favoring the annexation of Hawaii and the construction of the Nicaraguan canal; recommending recognition of Cuba as a nation; providing for a national board of arbitration, and for fostering the beet-sugar industry....The New York bankers' association adopted resolutions demanding that Congress take action on the currency question and recommending retirement of all government paper... Acting upon the suggestion of Captain-General Weyler, the queen regent has pardoned eight insurgent chiefs who were under sentence of death....A number of Russian students have been arrested at the request of the Russian government on the charge of complicity in nihilistic movements.

Saturday, July 17.—The steamship *Portland* arrived at Port Townsend, Wash., with over $700,000 in gold from the Klondyke region on board; the excitement over the discoveries is increasing on the Pacific coast....President McKinley nominated Terence V. Powderly, formerly general master workman of the Knights of Labor, to be commissioner-general of immigration....Turkey, after presenting a new and unacceptable frontier scheme to the peace conference, was informed that the conference would adjourn until the frontier line traced by the military attachés was accepted....The Rev. Dr. Butler, bishop-elect of Concordia, Kan., died in Rome.

Sunday, July 18.—The striking miners in the Pittsburg district are becoming desperate, and there are indications of trouble ahead ....An earthquake occurred in the island of Stromboli, one of the Lipari Islands....Edward Charles Baring, Baron Revelstoke, is dead.... An Indian loan of 300 lacs of rupees at 3½ per cent. is announced.

Monday, July 19.—The press of Madrid expresses sympathy with England over the Sherman incident and criticises the conduct of the American government... Gold to the amount of $250,000 was withdrawn from the New York sub-treasury for shipment to Canada....The steamer *Hope*, with the Peary and other Greenland expeditions on board, sailed from Boston ....The excitement in regard to the gold diggings on the Klondyke continues, and many men are setting out for the new Eldorado.... The Czar has telegraphed to the Sultan demanding the immediate evacuation of Thessaly.... Under-Secretary Curzon said in the House of Commons that the request of the United States for a conference to consider more adequate measures for protecting the seals had been declined as "premature"....The Japanese official press says it is probable that the Mikado's government will agree to the Hawaiian proposal to submit the pending disputes to arbitration.

Tuesday, July 20.—The President signed the deficiency appropriation bill....The treasury department notified the collectors of customs at New York and other ports to make final liquidation of all entries made since the passage of the tariff bill by the House, the retroactive clause having been discarded by the conferees....Emperor William's physician says that the sight of the Emperor's eye was in no sense impaired by the recent accident on the imperial yacht.... China is about to reorganize her army on the lines of the German military; a Chinese fleet is to be built in England and Germany... Jean Ingelow, the poet and novelist, died in London.

Wednesday, July 21.—The American exhibits of tools, agricultural implements, and bicycles at the Brussels exposition excel, but in other departments the American showing is a failure ....A Chicago dispatch says that 3,000 tons of Bessemer pig iron, the product of a Milwaukee mill, have been sold for export to Germany.... The Sultan of Turkey has issued an irade sanctioning the settlement of the frontier question in accordance with the wishes of the Powers.

Thursday, July 22.—The Secretary of State will issue a circular supplementing one previously sent out, in which foreign countries will be asked and invited to take part in the Omaha exposition....President E. B. Andrews, of Brown University, Rhode Island, whose free-silver utterances were distasteful to the trustees and fellows of the institution has resigned.... A monument to Gen. John A. Logan was unveiled in Chicago....It is said that the Dominion premier has obtained a written assurance

that Great Britain will denounce the Belgian and German commercial treaties....A new bill, giving the government power to repress opposition meetings and agitation, has been passed by the upper house of the Prussian diet....Mr. Whitelaw Reid, special envoy of the United States to the Queen's diamond jubilee, gave a notable dinner in London as a return for British hospitality.

Friday, July 23.—The treasury department has given orders for $104,000,000 in notes of small denominations, in anticipation of a large demand for currency to be used in moving the crops....T. B. McGregor, president of the united mine-workers of Missouri and Kansas, says he will refuse to order the men in his jurisdiction to join the coal strike....The Turks have begun the evacuation of Thessaly....The Czar has presented King Alexander of Servia, with 40,000 Berdan rifles and 25,000,000 cartridges....It is said that Germany, chagrined at the result of her protest against the annexation of Hawaii, sounded Japan, but the latter declined to be a party to any concerted action.

Saturday, July 24.—The tariff was passed by the Senate and signed by the President; the President sent to congress a message recommending the appointment of a non-partisan monetary commission....A number of steamships arrived at New York after a race across the ocean to enter their cargoes prior to the passage of the new tariff law....A company headed by J. Edward Addicks has sent representatives to the Klondyke region of Alaska to take part in the hunt for gold....Captain-General Weyler has recently received from Spain a million dollars in silver for war purposes....The partisans of Don Carlos, pretender to the throne of Spain, are said to have resumed active agitation ....Work has completely suspended in Barcelona, Spain, owing to strikes.

Sunday, July 25.—Debs and other strike agitators held meetings in the Fairmont region of West Virginia; the mines are all guarded by deputy sheriffs....The details of Count Okuma's (the Japanese minister of foreign affairs) protest against the annexation of Hawaii are published; in them the Count is quoted as saying: "Japan must oppose to the utmost; the annexation must not be recognized."....The visit of the Emperor and Empress of Germany to St. Petersburg is to be signalized by a great display of pomp and ceremony.

Monday, July 26.—The President and Secretary Alger decided to send a company of troops to Alaska to support the civil authorities in the administration of the law....The British government has again declined to interfere in the execution of the sentence imposed on Mrs. Maybrick.....The Transvaal raid was debated in the house of commons on a motion to compel the production of telegrams which had been refused the committee; the motion was defeated ....The Canadian cabinet has decided to levy a royalty on gold taken out of the Klondyke.

Tuesday, July 27.—The President has appointed Major Moses P. Handy, of Illinois, to be special commissioner to the Paris international exposition in 1900....Labor leaders met in conference at Wheeling, W. Va., to consider the coal-strike situation; mine operators met at Pittsburg and discussed a proposed uniformity agreement....United States ex-Senator James Doolittle, of Wisconsin, died near Providence, Rhode Island....As a result of the initiative of Germany, backed by Austria and Italy, a clause has been drafted for embodiment in the Turco-Grecian peace treaty whereby European financial control will be established at Athens... Mr. George J. Goschen, first lord of the British admiralty, announced a supplemental naval estimate of £500,000 for the commencement of four very swift armed cruisers, made necessary by rapid additions to foreign navies.

Wednesday, July 28.—The receipts from internal revenue during the past fiscal year amounted to $146,619,508, which was $211,106 less than the previous year....Passengers on the steamship *Majestic* arriving at New York were obliged to pay duties under the new tariff law on all personal effects they had brought from abroad exceeding $100 in value....Canada has decided to impose a royalty on all the gold taken from the Klondyke fields; the rate will be 10 per cent. on claims yielding $500 a month and 20 per cent. on all heavier yields; efforts are to be made to establish a telegraph line and build a road; customs and police officers are being hurried to the front.

Thursday, July 29.—President McKinley began his summer outing at Lake Champlain ... Decrees of sale of the Union Pacific railway under foreclosure were entered at Omaha; the upset price was placed at $50,637,455....Advices received in Chicago from twenty-seven States show that business is picking up, and that a definite improvement in conditions exists....The views of Germany as respects European control of Greek finances were agreed to by the ambassadors at Constantinople....In Mexico the theory is advanced that European bankers are depressing the price of silver as an answer to the Dingley tariff....Andrew Carnegie has offered the town of Stirling, Scotland, the sum of £6,000 for a public library.

Friday, July 30.—The state department is informed that Japan has accepted Hawaii's offer to arbitrate the differences between the two countries....The British foreign office notified Ambassador Hay that Great Britain accepted the proposition of the United States for an international conference on the question of pelagic sealing in the Bering sea....Further fighting has occurred between the British forces and native tribesmen in India; the tribesmen were repulsed....The King of Siam arrived at Portsmouth, England, and was received with royal honors.

Saturday, July 31.—The treasury department, has prepared a statement showing the estimated loss of revenue to the government on account of increased imports during the months of March, April, May, and June, 1897, in anticipation of the increased duties imposed by the new tariff act; the aggregate net loss is estimated at $32,666,427....The situation in the coal miners' strike becomes more serious....Captain-General Weyler announced that he would grant amnesty to fifteen hundred exiles from Cuba....A statement from Athens indicates that should foreign control of Greek finances be adopted the King of Greece would abdicate.

Sunday, August 1.—The state of siege at the De Armitt mines near Pittsburg was maintained, several thousand strikers arriving there from the surrounding country... It is reported from Cheyenne, Wyoming, that two officers of the Eighth Infantry, stationed at Fort D. A. Russell, are under orders to go to Alaska, to investigate the situation and report on the advisability of sending troops to that region....In consequence of the rapid spread of the revolt of the tribesmen the Indian government has ordered the reserve brigade to assemble....A report has reached Cape Town that the Portuguese have been badly routed in the Bileni district, north of Delagoa Bay....The foreign admirals at Canea have decided to oppose by force the landing of any additional Turkish troops.... News has reached Cairo of heavy tribal fighting up the Nile between the Dervishes and the Jaalins; the Dervishes, under one of the generals of the Khalifa, defeated the Jaalins in a pitched battle and occupied Metemneh on July 1.

Monday, August 2.—The monthly statement of the public debt shows that the debt, less cash in the treasury, at the close of business on July 31, was $993,446,646, an increase during the month of $6,790,560, which is accounted for by a corresponding decrease in the cash in the treasury; this decrease is in consequence of exceptionally heavy disbursements....Fort Chakdara, in the Chitral district, has been relieved by the British force under General Blood.

Tuesday, August 3.—The proposed uniformity agreement in regard to coal mining in the Pittsburg district is completed; it is believed that the required number will approve it; after that it is intended to hold a conference with the miners and agree upon a new wage scale....British metal dealers have placed an order with the Pittsburg reduction company for 1,000 tons of aluminum; the contract was secured in open competition with all the aluminum works of Europe....A division of the Turkish fleet has been ordered from the Dardanelles to Crete.... Viscount Garnet Joseph Wolseley, field marshal and commander-in-chief of the British army, is seriously ill....The uprising of natives in Bechuanaland has collapsed, the chiefs having surrendered to the British authorities.

Wednesday, August 4.—The domestic exports for the fiscal year, which ended on June 30th last, were the largest in the history of the United States and established a new record.... The government has begun to press for a settlement of the McCord claim for $50,000 against Peru....All records for gold deposited at the San Francisco mint in one day were broken by the receipt of $3,750,000....The South African policy of the British government was attacked in the house of commons; Mr. Joseph Chamberlain declined to reopen the Transvaal affair, but explained the action of the government with reference to the commercial treaties with Germany and Belgium.

Thursday, August 5.—The price of silver in New York declined to 55¾ cents per ounce bid; this makes the bullion value of the silver dollar a trifle more than 43 cents....The State committee of the National Democrats of Ohio decided to call a state convention in Columbus, on September 8 and 9, to nominate a state ticket ....The deputies representing the principal Cretan provinces have sent to the foreign admirals an official declaration, accepting autonomy....Japan is said to have suggested the King of Belgium as arbiter of the dispute with Hawaii.

Friday, August 6.—The commercial ratio between gold and silver is 36.6 to 1 ...The navy department directed the preliminary acceptance of the gunboats *Marietta* and *Wheeling*, built by the Union iron works of San Francisco.... The British cabinet informed the American bimetallic commission that it will probably reply to the proposal of the commissioners on behalf of the United States in October; the American commissioners say they are not discouraged by the postponement...The British parliament was prorogued until October 23....The British political officer at Malakand, India, reports that 2,700 of the tribesmen were killed in the recent uprising....The Canadian government has taken steps to enforce the alien labor laws against citizens of the United States.

Saturday, August 7.—The President has made the following appointment: William L. Distin, of Quincy, Ill., to be surveyor-general of Alaska ....The report of an expert of the geological survey, who made investigations in Alaska, is published....The international arbitration conference was opened in Brussels; an especially cordial welcome was given to the delegates from the United States....The Emperor and Empress of Germany arrived at Cronstadt, Russia....At the state banquet given by the Russian Czar and Empress to Emperor William and Empress Augusta Victoria in St. Petersburg, mutual toasts were indulged in for the maintenance of peace.

Sunday, August 8.—Señor Canovas del Castillo, the prime minister of Spain, was assassinated at Santa Agueda by an anarchist.... Secretary of State Sherman expressed the opinion that the assassination of Castillo would create sympathy for and thus strengthen his party.....It is asserted that the Russian government will prohibit the export of wheat, owing to the bad harvest throughout Russia.

Monday, August 9.—Consul-General Haywood, in a report to the state department, states that during 1896 American vessels numbering 247, of 243,983 tons, entered at Hawaiian ports, while vessels of all other nationalities numbered 139, of 234,014 tons; these are the only foreign ports where a majority of the carrying trade is now under the American flag....The annual meeting of the American association for the advancement of science began in Detroit ... Michele Angine Golli, who shot and killed Señor Canovas del Castillo, the Spanish premier, has confessed that the deed was the outcome of an extensive anarchist conspiracy....Another outbreak is reported on the Afghan frontier.

Tuesday, August 10.—Many British scientists are arriving at New York to be present at the meeting at Toronto, Can., of the British Science Association. Among the arrivals are Lord Kelvin (Sir Wm. Thompson), the great inventor and experimenter in magnetism, and Sir Joseph Lister, the distinguished English surgeon.

INQUIRIES ANSWERED

I see it stated that Germany ranks third among the nations that possess colonies. Is not this a mistake — the writer probably meaning Holland or Belgium? Kindly give a list of the colonies owned by these European powers, with their location, area and estimated population. Also, please state which nation ranks second as a colony-possessing power, England, presumably, being first.

The last twenty years have seen great activity among European nations in the acquisition of colonies or in adding to their number. Two decades ago, Britain's colonies, protectorates and dependencies, embraced an area of 7½ million square miles, with a population, in round numbers, of 200 millions. To-day the area of her possessions exceeds 11 million sq. m., with an estimated population of 340 millions! France comes next, with colonial possessions and protectorates dispersed over Asia, Africa and Polynesia, besides Guiana and her islands off Newfoundland. The total area of these slightly exceeds 2½ million square miles, with a population estimated at 42 millions.

Some thirteen years ago (1884), Germany began to extend her dominion beyond the bounds of Europe, and though, as yet, she possesses no colonies in the proper sense of the term, she has declared her protection over various areas or spheres of influence, chiefly in Africa and the Western Pacific. The area of her African possessions (which include Southwest and East Africa, Togoland, and the Cameroons), is estimated at 920,000 square miles, with a population, roughly speaking, of 10 millions. In addition to this territorial area in Africa, Germany has acquired possession or annexed the following islands, etc., in the Pacific (area 100,000 sq. m.; pop. 400,000): Solomon Islands, Marshall Islands, Kaiser Wilhelm's Land, and Bismarck Archipelago.

The Colonial possessions of the Netherlands, which include Borneo, Java, Sumatra, the Moluccas, etc., cover an area of 780,000 square miles, with a population, according to the last returns, of 34 millions. Belgium has no colonies, though she exercises a quasi-sovereignty over the Congo Free State in Africa. About twelve years ago the Congo State, which was opened up in part at the individual expense of Leopold, King of the Belgians, was placed under his personal sovereignty; but in 1889 the King, by will, bequeathed his rights to Belgium, and in the following year they were declared inalienable. A convention between Belgium and the Congo Independent State, held July 3, 1890, reserved to Belgium the right of annexing the State after a period of ten years.

Will SELF CULTURE kindly give me (a teacher) a brief statement, intelligent to young people, of how rain and hail are produced? Also say where I can read about such phenomena, including thunder-storms, in the Encyclopædia Britannica.

The producing causes of rain, thunder, and hail you will find set forth in the article "Meteorology" in the Encyclopædia Britannica, Vol. XVI., pages 119, 120, 129, 132, and 150. For an explanation of the reverberations that are heard in the prolonged roll of thunder, see the article "Acoustics," Vol. I., page 107. With regard to rain, it may be said, in popular language, that under the influence of solar heat, water is constantly rising into the air by evaporation from the surface of the sea, lakes, rivers, and the moist surface of the ground. Of the vapors thus formed the greater part is returned to the earth as rain. The moisture, originally invisible, first makes its appearance as cloud, mist, or fog; and under certain atmospheric conditions the condensation proceeds still further until the moisture falls to the earth as rain. Simply and briefly, then, rain is caused by the cooling of the air charged with moisture.

Hail is the name given to the small masses of ice which fall in showers, and which we call hailstones. When we examine a hailstone it is found usually to consist of a central nucleus of compact snow, surrounded by successive layers of ice and snow. Hail falls chiefly in spring and summer, and often accompanies a thunderstorm. Hailstones are formed by the gradual rise and fall, through different degrees of temperature (by the action of wind-storms), and they then take on a covering of ice or frozen snow, according as they are carried through a region of rain or snow.

I have been looking in the Encyclopædia Britannica for the word *Xantho*, and have been unable to find it. Please instruct me where to look for the term and supply its meaning.

The Encyclopædia Britannica, we again notify correspondents, is *not* a defining dictionary or lexicon, but a collection of treatises on all branches of knowledge. The word Xantho, which is a prefix, meaning yellow (from the Greek *xanthos*), our correspondent will how-

ever find in the Britannica in connection with words to which the term yellow is prefixed. It will be found in connection with anthropology, or the science that treats of the varieties of the human races, also in connection with mineralogy, with bird and plant life, and, generally, wherever the term yellow is applied. See, among other references to the compounds formed from Xantho, Encyclopædia Britannica Vol. XVI., page 431 (last column near the top), for a number of references under Mineralogy. Also see Vol. II., page 113, for the Xanthochroi, or blond Caucasian peoples, under the article Anthropology.

Pray can you give me any account of a John Somerville, who was a man of some fame? I do not find him in the Encyclopædia Britannica. Please, at the same time, state in SELF CULTURE which is the correct expression — To-morrow *is* Wednesday, or To-morrow *will be* Wednesday.

There was a John Somerville living in Shakespeare's day who achieved notoriety as a conspirator, by threatening the life of Queen Elizabeth. This is the only one of that name known to us among historical characters. You will find mention of him in the article on Shakespeare — page 754, Vol. XXI. There was a William Somerville, a Yorkshire poet, who lived early in the 18th century; and there is Mary Somerville, the scientific writer and mathematician; but no other Somerville, so far as we know, who was in any way famous.

The objection to the phrase "To-morrow *is* Wednesday" we have always treated as rather pedantic or in the nature of a verbal quibble. Of course, logically, when speaking of a future day, "will be" is more accurate; but when we use "is" we mean to imply that to-morrow (when it comes) *is* such and such a day, and *not* some other day. Colloquially, we do not see any serious objection to the use of *is*. Speaking of public holidays, we say the Fourth of July *is* one, Washington's birthday *is* another. These instances, it is proper to say, however, do not imply futurity; if that is implied, "will be" should be used; though we may use *is*, if we mean, as we usually do, that to-morrow, when it arrives, *is* such and such a day. In similar forms of speech in other modern languages the present tense is permitted and sanctioned by good usage.

I desire some information regarding the phenomenon "catalysis." Will SELF CULTURE kindly supply?

Catalysis is the name given to a numerous class of chemical changes that are induced in certain chemical systems by a substance which does not itself undergo any permanent alteration, but which by its mere presence, under suitable conditions, brings about a rearrangement of the molecules of the bodies with which it is placed in contact. The phenomenon is also called "contact-action." The material which acts in this manner upon other chemical substances without itself apparently being affected by the changes it induces, has been termed a catalytic or "contact-force." No satisfactory theory has been advanced to account for these changes, or to define what the force of catalysis is. The Swedish chemist Berzelius, who was the first to study these reactions in certain substances under more or less favorable conditions, assumed this catalytic force to be of the character of an electrical force, and could find no other definition for the peculiar power.

Faraday, Konowalow, Ernest Meyer, and other chemists, have had theories accounting for the catalytic action, most of which have been disputed by other authorities. Mills has propounded certain ideas relating to catalysis, making motion the basis of the force. Ostwald has shown valuable determinations of dynamical effects of substances in inducing or accelerating chemical dissolution or decomposition, and holds dynamic force to be identical with catalytic force. Contact chemical action, whatever be its true cause, plays a highly important part in several industrial operations, such as the inversion of cane sugar, the conversion of starchy matters into glucose, the decolorization of sugar solutions by charcoal, and, recently found useful, in the purification of waters by filtration through porous media.

Formerly the great industrial processes of fermentation in the manufacture of alcoholic liquors were referred to contact chemical action, but it now seems certain that such changes are phenomena connected with organic life, and not with those of unorganized matter. For a theoretical consideration of catalysis see Mendeljeff's work, B. 19,456. For examples of catalytic action upon various substances, see Watt's "Dictionary of Chemistry," Vol. I., pages 731–752.

I have spent some years in the study of German, and I believe that I read and write it as well as I do English. I therefore desire to ask you whether you can give me the address of any publisher who is willing to pay fair remuneration for translations of German prose into English. If you do not know of any such,

perhaps you will inform me of some means by which I can make my knowledge of German useful.

Your letter is so meagre in its details that we fear that we cannot be of much service to you. You say nothing of your present occupation or what your abilities are and the line of them, whether you have any literary knowledge of German, we mean, whether you have done any original literary work and know the literature, past and current, of Germany, and if so in what departments. Had your letter been more detailed, we could have better advised you. The work of translating is the veriest hack work, and in any of the large cities there are probably thousands who can do this sort of work, of which there is little to be done, and what little there is is indifferently paid. If you have scholarly attainments and can show good work already done by you in any useful walk of literature, the chances of some position would be better. If you have not any special qualification, and have not done anything to recommend you to a publisher, the prospect of work in the line you indicate is not promising. You might get some position as a tutor, or might do better in some commercial house, where a speaking knowledge of both English and German would be appreciated; but there is, so far as we know, little to be done as a translator, unless, as we have said, there is exceptional knowledge or ability or proof of good work already done to speak for you. You might, however, write to the following publishers: Henry Holt & Co., W. 23rd St., New York. The American Book Company, Washington Sq., New York. D. C. Heath & Co., Educat'l Publishers, Boston, Mass. Ginn & Co., Educat'l Publishers, Boston, Mass. E. Steiger & Co., 25 Park Place, New York.

I desire to know what means there are of getting to the Yukon gold-fields this season, the length of the trip, and its cost. Also any information respecting these gold-fields beyond that conveyed in the editorial in the current issue of SELF CULTURE.

It is late, for the present season, to think of setting out for the Yukon gold-fields if you desire to go all the way by water. The San Francisco steamer for points on the Yukon river (including Circle City on the Alaskan side of the international boundary line, and Dawson City, near the junction of the Klondyke river with the Yukon on the Canadian side) have their whole accommodation taken up for the trips August 1st and 15th and Sept. 1st, and soon after that navigation on the Yukon ceases for the season. The trip from San Francisco by steamer all the way (about 3,500 miles) consumes from four to six weeks, and costs, we believe, $150 first-class and $125 second-class. It is a long and tedious journey, whichever way you go, and we need hardly say that no one should venture into the region without money enough to buy his supplies for a year, besides paying for his passage and outfit. As the Klondyke region is in Canadian territory, he should have enough money with him to buy or lease his claim and pay any tax which the Dominion authorities may impose as a mining royalty. An outfit can be purchased at San Francisco for about $100, and the cost of transportation averages $15 per 100 pounds.

Another route to the gold-fields is by steamer from Puget Sound to Juneau, on Chilkoot Inlet, thence 100 miles by river to Dyea, then overland, between four and five hundred miles, to the Klondyke. The steamers, we believe, sail fortnightly from Seattle, and there supplies can be purchased much more advantageously than on the Yukon, though the charges for transportation overland presumably are higher than by steamer from San Francisco.

There is a statement made, which, so far, we have been unable to verify, that the company (The North American Transportation and Trading Co.), that owns these steamers plying between Seattle and Juneau, won't allow a miner to take any food north of Portland, Ore., but it will guarantee to furnish him food for a year for $400. To meet monopolies and contingencies of this sort, as well as other hindrances that may arise, the intending prospector in the region will do well to be prepared. As we write, there is talk at Seattle, Wash., of chartering a special steamer for the trip to the headwaters of the Yukon, and to provision her with all necessary supplies and outfit, and to utilize it during the winter as headquarters for the Tacoma and Seattle colony.

The Canadians, it may be added, are already streaming into the gold district by steamer from Victoria, British Columbia, by the Juneau route; and many are also venturing overland through the Canadian North-West Territories, thus adding largely to the already congested region.

The Klondyke river is a tributary of the Yukon, and the region of the gold-fields lies within the Canadian North-West territories, about fifty miles by water from Fort Cudahy on the international boundary. The resident agent of the Canadian government at Dawson City, in the Klondyke region, no doubt would answer any inquiries addressed him. Mr. P. B. Weare,

vice-president of the North American Trading Co., at Chicago, may also with advantage be communicated with.

I want to learn what I can about the fairy tale "Seven-League-Boots," its meaning and significance. Also, its origin, its age, etc. In what work or works, fictitious or otherwise, it can be found, and how or in what connection it is there used. If you can, please quote a sentence or passage in which it occurs, or refer me to one. Is "Seven" the only way the first word is written, or could the figure 7 be as correctly used?

The magical power of the Seven-League-Boots is well known to juvenile readers through the popular nursery tale of "Jack the Giant-Killer." It figures in the same manner in the nursery tales of Scandinavia, Germany, France, Holland, Portugal, Italy and Great Britain. The tale of the "Seven-League-Boots," the "Magical Boots," or the "Shoes of Swiftness" is common to all Aryan nations. The "Seven-League-Boots" of the renowned hero, Jack the Giant-Killer, possesses similar qualities to those of the wonderful "Hat of Fortunatus." It is a favorite theory in popular myths and fictions in folk-lore that some highly-gifted object, if gained possession of, will supply the fortunate owner with the gratification of some particular wish, or furnish him with the golden means of gratifying every want. There can be no doubt that the tale of Jack and the Giants, so long a nursery favorite in all countries, came to us from Northern Europe, and since the incidents are for the most part found also in Asiatic popular fictions, they may perhaps be considered as survivals of primitive Aryan myths, relating to conflicts with monstrous beasts, or hardly less brutal aboriginal races of men. The hero Jack obtained the magical boots in this wise: King Arthur and his son were travelling about, and meeting with Jack they joined company. The King being in want of money, Jack proposed that they should sup and sleep at the house of a monster giant, who had three heads, and who could slay five hundred men in armor. So Jack goes to the house of the Giant, and tells him that the king's son is coming with a thousand men to overpower him.

"This is bad news, indeed," says the giant, "but I have a large vault underground where I shall hide myself." While the giant is thus in his self-imposed imprisonment, Jack and the prince appease their hunger by eating heartily at the giant's expense, and, sleeping soundly till morning, they arose and took the giant's hidden treasure. Jack then goes to release the giant, who asks him what he shall give him as a reward for his care in seeing that his castle is not demolished, nor his hiding-place revealed.

"Nothing," answers Jack, "but your old rusty sword, the coat in the closet, and the cap and boots you wear."

"Thou shalt have them with all my heart," quoth the giant, "as a just reward for thy kindness in protecting me from the King's son, and be sure you carefully keep them for my sake, for they are things of most excellent value. The coat will keep you invisible; the cap will furnish you with knowledge; the sword cuts wherever you strike, and the boots are of most extraordinary swiftness." Jack obtains the objects and departs with the prince to become the terror of all, through the magical attributes of his possessions.

These marvellously endowed objects play important parts in the romances and popular fictions of Northern Europe. They first appear in the Sagas of the Scandinavian countries where the magical boots are known as "*sju mils stöv-ler* from which is made the English translation "Seven-League-Boots." In Portuguese Folk-Tales it takes the form of "dancing shoes." It also occurs in the Italian popular tale of "Lion Bruno," the hero who finds three robbers quarrelling in the woods and he is chosen to be their arbitrator. They had stolen three things of great value and could not agree about the division of them. These were a pair of boots which had this virtue, that whoever put them on could run a league faster than the wind, a purse, which yielded a hundred ducats by saying "Open and shut," and a coat which made the wearer invisible. Lion Bruno takes all three and by putting on the boots gets safely off, leaving the robbers to quarrel among themselves. A Dutch version gives the boots the power of walking as fast as the wind.

In Grimm's Fairy Tales they are called the "Shoes of Swiftness," and "Dancing Shoes." From the fact of their figuring in Asiatic fictions they are considered as being of primitive Aryan origin.

We think the form "seven" is more properly used than the figure 7. For the literature of the subject, see "Chap-Books of the Eighteenth Century," by John Ashton; Warton's "History of English Poetry;" "Popular Tales and Fictions" (2 vols.), and their migrations and translations, by W. A. Clouston.

Please give me your opinion on a moot point — whether one should be posted on all the topics of the day, irrespective of the fact that one may not be interested in many of them. Of what interest, for

instance, to the American citizen was the Jameson raid into the Transvaal? Is it not a waste of time to read about and keep track of such occurrences, while we in this country have so many local matters of moment to concern us?

To us, it seems not a question of necessity, but one of ability and expediency, whether one should or should not endeavor to inform one's self as to the chief topics of the time. To do so, if one has the leisure and the strength, will certainly bring its reward, and in ways often that one may not at the time appreciate or even see. Much, of course, will depend upon one's tastes and inclinations as to the topics to be taken up or read about, and the degree of interest they will have for one. However omniverous a reader one may be, there must be a limit to the amount it is possible daily to read. It also requires some degree of training, as well as judgment, before one can select wisely what one shall currently dip into. Our motives in reading may, moreover, vary; at one time, we may read with some special object in view — to glean as much as we can of certain subjects that have an interest for us, educationally, commercially, or professionally. At another time, without being specially interested, we may read to gather facts on a topic that may be up in the public mind, or simply with the idea of adding to our stock of general information. There is little, if any, serious reading that we should say was a waste of time. We must, of course, use our judgment, and consider our time and opportunities, and select such subjects to read about as may seem instructive and informing or merely entertaining and agreeable.

It is true, as you say, that one is called upon to solve, if one can, many local problems, and the American citizen will doubtless find in the discussion and consideration of such more practical interest than in those that concern wholly or chiefly another nation. We can hardly set bounds, however, to what is or may not be of moment to this country. The Jameson raid, which you cite, did not even remotely affect us here; but had the English authorities not disowned Jameson's act, there might have been another Boer war, with the possibility of Germany supporting the South African Republic. Had this been the sequel, there would have been European embroilment, and America could not have remained unaffected. England's permitting the "Alabama" to escape from the Mersey, in 1862, may at the time have been looked upon by millions of our people with indifference. Yet how important, in the case of both countries, were the consequences of the act. The application of the argument is obvious; one can rarely, at the time of an occurrence, foresee its issues, and he is wise who has at his finger ends the whole facts of the case. Time and inclination are, however, important factors, and much of our reading must necessarily be governed by what they prompt or dictate.

Pray what colleges in the United States give free scholarships and how can I obtain one? What percentage must I pass on examination to enable me to win a scholarship? Also please state if one receives the same consideration from the professors as one receives who pays his way. Kindly name a good medical dictionary.

In this country, colleges do not, as a rule, award scholarships as the result of proficiency in examinations. They are donated generally on other grounds, sometimes denominational, sometimes personal — usually as the person who has founded them conditions. One will leave a sum, the interest of which is to be expended in an annual scholarship for assisting the son of a clergyman, or of a poor but deserving widow; other scholarships are founded upon other grounds and are to be obtained through individual preferment. Your best course will be to write to one or other of the wealthier universities, such as you would care to go to, and ask for the College Calendar, in which the conditions are usually set forth upon which you may obtain a bursary or scholarship. You will find a full list of American colleges in the current year's issue of the New York World Almanac, page 285, and from this list you can select the university or college you would care to go to, and where the fees for tuition and living expenses are within your means.

Your being a free student would make no difference, we should say, in the attitude of the faculty towards you.

Dunglison's Medical Dictionary (price $8.00), published by Lea Brothers & Co., Philadelphia, is a high and useful authority. The same house issues a student's "Dictionary of the Terms Used in Medicine and the Collateral Sciences" ($2.00) by Hoblyn, which may suffice you.

Please tell me if there is any work of modest compass likely to be useful to me in gaining a knowledge of my duties as a citizen.

The book which you should have at hand for such information as you desire is Thorpe's "Government of the People of the United States." The work is prepared by Francis

Newton Thorpe, professor of Constitutional History in the University of Pennsylvania, and is the standard text book in use in the high schools of this country. The book is designed to instruct the youth of the land in just such matters as you mention in your communication. You will find questions intelligently answered, with many interesting facts pertaining to the government of the United States. It has chapters dealing with "The Making of the Nation," "The Law-makers and the Laws," "What Congress may Do," "Powers Denied to Congress and to the States," "The Executive Departments," "Government of the State, County, City, Township, Town, etc." The work treats in fact of every phase of the rights and the duties of American citizenship and with the problems of government. It is published by Eldredge and Brother, Philadelphia, Pa. Price $1.10 (1892), and may be ordered through any bookseller.

I am a stenographer in a law office and have the ambition to perfect myself in the English branches so as to command, in time, a better and more remunerative position. Will you give me the benefit of your wise counsel and tell me how I shall best attain my object? Also, please say what I should read as introductory to a legal education.

Primarily, we would suggest copious reading of the best literature, with a careful study of English and American models of good literary style, to enable you to perfect yourself and extend your vocabulary. This you will find most useful to you as an amanuensis or stenographer. To fit yourself for the vocation of a lawyer, you will do well, as a preliminary, to read the articles in the Encyclopædia Britannica bearing upon the different branches of law — those on Jurisprudence, on Common Law, Criminal Law, International Law, Municipal Law, and Constitutional Law, as well as the articles on Marriage Laws, the Law of Landlord and Tenant, on Intestacy, on Wills, on Partnerships, on Bankruptcy, on Labor Laws, etc., etc. If you possess Dr. Baldwin's "Guide to Systematic Readings in the Britannica," and turn to the section on "The Lawyer," you will find many valuable suggestions as to the scope of reading to be done in the Britannica.

But, when you have read and studied these articles, with the memoirs of the great jurists, etc., you should either take a course at some law school, or enter a lawyer's office. The one or other method you should pursue before you can hope to make yourself proficient as a practitioner or be able to take a case in court or advise wisely as counsel.

For your general literary attainments, if you subscribe to SELF CULTURE, you should read its articles studiously and critically, and inform your mind by reading monthly the answers to correspondents' inquiries. There are works prepared to enable one who is careful to escape the pitfalls in writing and speaking correct English, and there are useful books to study on English Composition. If you read the "Inquiries Answered" department in the monthly issues of SELF CULTURE you will frequently see such works cited.

You will confer a favor by stating in your excellent monthly which country in the world has the highest standard of education. Also please state whether Canada or the United States has the most thorough school system. You will further oblige me if you will indicate a few of the best Normal Schools in which I could prepare myself for the vocation of a teacher.

We enclose you a list of institutions that give a Normal School training, which you will find available in preparing yourself for the profession of teaching. The course is usually a three years' one.

It is difficult to answer your question as to which country in the world has the highest standard of education. That can be answered accurately only with qualifications. Each has its own distinctive system of training, and that country, *cæteris paribus*, of which one is a native, must be best suited for the training of its own people. The French student, for instance, going to Germany for specialized work, finds educational systems there so different from his own that he does not get the benefit from the German training that a German gets, and *vice versa*. For specialized work, Germany ranks perhaps the highest, and for elementary instruction it is probable that no system is superior to that of Prussia. All things considered, however, we doubt if England can be surpassed in the matter of high standards in education — that is for an all-round education, in classics, mathematics, the sciences, as well as in the professions of law, medicine, and divinity. In Scotland, especially in Edinburgh, the work is of a high as well as of a thorough character, while the elementary education of its youth has always been sound and good. This country (the United States) is fast bringing up its standard, in such institutions as Harvard, Yale, Johns Hopkins, Columbia, Cornell, Chicago, Princeton, and Pennsylvania.

Canadian education can only be boasted of in the Province of Ontario, and the system there, from the public schools, through the secondary, to the national university and the colleges for professional training, is undoubtedly high. We should not say, however, that education in Ontario was of a more thorough stamp than that of this side the boundary line, especially in the Eastern and Middle States. Canada has not the wealth, nor have her colleges the endowments of chairs and professorships, that the chief institutions of the United States possess.

Please give me through SELF CULTURE the name of a good magazine on photography and the address of its publisher. Also, oblige me with a list of one or two manuals on Amateur Photography.

We think you will find Wilson's "Photographic Magazine," a monthly publication (subscription $3.00 per year), issued at 853 Broadway, New York, a good periodical. "The Photo-American" ($1.00 per year), also published at New York, is recommended. For manuals of photography, write to either Sweet, Wallach & Co., Chicago, or to Scoville and Adams, East 11th St., New York. The most useful works known to us are: Taylor's "Photo-Amateur" (price 50c.); Price's "How to Make Pictures" (price 50c.); and Roche's "How to Make Photos" (price 75c.). The former two are, we believe, published by Scoville and Adams; the latter by E. & H. T. Anthony, 591 Broadway, New York.

Will you please outline for me a course of reading in connection with Roman History? Also, specify such chapters in the Britannica on the ancient Romans that it would be well to study.

We would recommend your reading the precis of Roman History and Literature furnished in the numbers of SELF CULTURE for last year, July to September, viz.: The Early History of Rome, July, 1896; The Civil Wars of Rome, August, 1896; and Rome to the Fall of the Western Empire, Sept., 1896; Roman Literature, Oct., 1896.

The Encyclopædia Britannica articles on Roman History, Roman Law, and Roman Literature, you will also find profitable to read, together with those on the topography, archæology, and mythology of Rome, and the biographies of Cæsar, Pompey, Cicero, Sulla, Nero, Tiberius, Justinian, Trajan, Scipio, Marius, and Hannibal. If you possess Dr. Baldwin's "Guide to Systematic Readings in the Britannica" consult pages 35, 65, 80 and 86.

The points in your reading to be brought out and fastened in the mind are:

How Rome became a city and mistress of Italy; Her wars with Carthage; How she conquered the East, and how her people (the Romans) behaved as a conquering nation.

The dangers that beset the Roman state and attempts at reform by the Gracchi, the war with Jugurtha, and against the Teutones and Cimbri, and the general misgovernment, should then be taken up. After this will come in succession the Civil Wars of Rome, the Beginnings of the Empire, the Flavian Emperors (69–192 A. D.), and the Emperors elected by the soldiery (192–284 A. D.). The era of Diocletian and Constantine, and that of the Goths and Huns, and their settlement in the West, will bring you to the political passing away of the Roman Empire. Any further outline you desire we shall be glad to furnish.

Will SELF CULTURE please tell me who wrote the novel "Crime and Punishment?"

Feodor M. Dostoyevsky (dŏs-tō-yĕf′-skē), a Russian novelist and journalist (1822–1881), who was exiled from Russia for participation in a conspiracy in 1849, but was pardoned on the accession of Alexander II. His writings include "The Poor People," published in London under the title of "Injury and Insult" (1846); "Memoirs from the House of Death," also published as "Buried Alive" (consisting of his Memories of Siberia, 1858); "The Idiot;" and "Crime and Punishment" (1866, English translation, 1886). The author's name is sometimes given as *Dostoieffsky*.

I have seen, in the August number of SELF CULTURE, your ready answers to an inquirer respecting the sources of some Familiar Quotations. I wonder if you would do me a similar service, by indicating the sources of the following:

(1) "Purity is the feminine, Truth the masculine, of Honor."

(2) "The tocsin of the soul — the dinner bell."

(3) "There is nothing makes a man suspect much, more than to know little."

(4) "They never taste who always drink; they always talk who never think."

(5) "Enthusiasm is the leaping of lightning, not to be measured by the horse power of the understanding."

(6) "A woman never forgets her sex. She would rather talk with a man than an angel any day."

(1) Archdeacon J. C. Hare, in "Guesses at Truth;" (2) Lord Byron (Don Juan, Canto V. st. 49); (3) Lord Bacon, in one of his Essays, "Of Suspicion;" (4) Matthew Prior (1664–1721); (5) Emerson, in the "Progress of Culture;" (6) Oliver Wendell Holmes, in "The Poet at the Breakfast Table."

Will SELF CULTURE kindly state who holds the world's record for speed on the typewriter and say what speed has been attained?

Our correspondent asks a question we feel unable accurately to answer. Perhaps some one will enlighten him and us. Some years ago, the official stenographer of the Ninth Judicial District of Michigan (Mr. C. H. McGurrin) attained, in a contest before the London Press Club, the speed of 208 words per minute. The matter written was a memorized sentence dictated by some one present. When blindfolded the same operator attained a speed of 155 words; for ordinary matter the speed was 132 words; and for continuous work lasting three hours, he attained a speed of 96 words. The highest previous records, we believe, were 179 words by Thomas W. Osborne, of Rochester, and 135 words by Miss M. P. Ellis, at Paris. Mr. Frank McGurrin, of Utah, brother of the champion typist, in a repetition competition wrote 162 words; in a sustained contest he wrote two and a quarter newspaper columns in an hour, at the rate of 76 words per minute. The speed of average writers for continuous news work ranges, we understand, from 50 to 70 words.

In the sketch given in SELF CULTURE (April, 1896) of the late Prof. Henry Drummond, you speak of him, as you do of Sir John Lubbock, as a "Christian Evolutionist." What is meant by that term? Is it that a Christian Evolutionist accepts evolution as taught by Darwin, Spencer, and others, and at the same time believes that the Scriptures are inspired? This is a puzzle to me, and I shall be glad to be enlightened.

We fail to see or appreciate the difficulty you speak of. In using the term "Christian Evolutionist," we spoke of one, like thousands of others (the writers St. George Mivart, Prof. Le Conte, the late Dr. J. G. Romanes, and the late Prof. Henry Drummond, among them), who, while accepting the theory of Evolution and the evidence upon which it rests, nevertheless see in it nothing anti-Christian. Many who have embraced the Evolution hypothesis see in it the overthrow of the Christian system; they out-Darwin Darwin in their haste to overturn Revelation, and ascribe power to Evolution to account for everything. Not only, say they, is man structurally developed from the ape, but they account for our habits, our instincts, our language, and even our morals and the faculties of the mind, by ascribing them to transmitted experience. This is not the conclusion of all Evolutionists. Those whom we have labelled "Christian Evolutionists," in contradistinction to Evolutionists of the Materialistic school, admit that the species may have developed, or have been evolved, from a few low forms of life. But they draw a line between the physical and the intellectual and moral man, and emphasize the fact that there is no proof that man as a thinking, reflecting, worshipping being is a mere product of Natural Selection. They assert (indeed, the Agnostic Evolutionists admit as much) that Evolution is not an efficient cause of anything; it does not attempt to account for the origin of life. Nor does this class, in the main, imply that back of the potentialities with which life, animal as well as vegetable, is endowed, there is not design, with Intelligence and even Beneficence as a Final Cause. This is the theistic position, or, at least, it comes close to it; and is the one that marks the distinction we had in view when we spoke of a Christian Evolutionist. It is the position that substitutes development for the catasthropic in creation, and holds rational, and not irrational, views of Inspiration.

Self Culture would do me a great service by furnishing me with some thoughts for an essay on "The Women of Shakespeare."

In female characterization, as in every other department of dramatic composition, no poet, ancient or modern, has ever equalled Shakespeare. In Shakespeare's day the Middle Ages still lingered with a sunset glow, and the grandeur of the era was blended in his imagination with the bright soft tints of the coming time. His characters, both male and female, combine history and real life; they are complete individuals, whose hearts and souls are laid open before us that all may behold and judge for themselves. We hear Shakespeare's men and women discussed, praised and dispraised, liked and disliked, as real human beings. The prevalent idea is that Shakespeare's women are inferior to his men. This assertion is constantly repeated and has been but tamely refuted. Mrs. Jameson, in the introduction to her work, "Characteristics of Women," says in regard to this matter: "If these people mean that Shakespeare's women are inferior in power to

his men we grant it at once; for in Shakespeare the male and female characters bear precisely the same relation to each other that they do in nature and in society — they are not equal in experience nor in power; they are subordinate throughout. If situation influences the mind, and if uniformity of conduct be frequently occasioned by uniformity of condition, there must be a greater diversity of male than of female characters. Add to this the limited sphere of action of woman, consequently of experience, the habits of self-control rendering the outward distinctions of character and passion less striking and less strong — all this we see in Shakespeare as in nature."

Juliet, for instance, is the most impassioned of the female characters, but what are her passions compared to those which shake the soul of Othello? Look at Constance, frantic at the loss of her son — then look at Lear, maddened by the ingratitude of his daughters; it is as the west wind bowing the aspen tops compared to the tropic hurricane when forests crash and burn and mountains tremble to their bases. Lady Macbeth with all her soaring ambition, her vigor of intellect, her sincerity, her courage, and her cruelty — what is she compared to Richard III? She is as woman compared to man in nature. Place Lady Macbeth in contrast with Richard III. and you see at once the essential distinction between masculine and feminine ambition — though both in extreme, and overleaping all restraints of conscience or mercy. Richard says of himself that he has "neither pity, love, nor fear;" Lady Macbeth is susceptible to all three.

The reason that Shakespeare's essentially wicked women have such a singular hold upon our fancy is from the consistent preservation of the feminine character, which renders them more terrible, because more credible and intelligible — not like those monstrous caricatures we meet with in history where certain isolated facts and actions are recorded without any relation to causes, or motives, or connecting feelings and pictures exhibited, from which the considerate mind turns in disgust, and the feeling heart has no relief but in positive and reasonable incredulity. Hence it is that Shakespeare, whether he portrayed the wickedness founded in perverted power, as in Lady Macbeth, or the wickedness founded in weakness, as in Lady Anne, or Cressida, he is the more impressive, because we cannot claim for ourselves exemption from the same nature, before which, in its corrupted state, we tremble with horror, or shrink with disgust.

Lady Anne, in "Richard the Third," is just one of those women whom we see walking in crowds through the drawing rooms of the world, the puppets of habit, the fools of fortune, without any particular inclination for vice, or any steady principle of virtue; whose actions are inspired by vanity, not affection, and regulated by opinion not by conscience; who are good while there is no tempation to be otherwise, and ready victims of the first solicitation to evil. In the case of Lady Anne we are startled by the situation: not three months a widow, and following to the sepulchre the remains of a husband and a father she is met and wooed and won by the very man who murdered them. Cressida is another compound of vanity, weakness and falsehood, drawn in stronger colors.

On the other hand, Shakespeare's amiable women are touched with such exquisite simplicity — they have so little external pretensions — and are so unlike the usual heroines of tragedy and romance as to be delightful to us on perceiving our own nature in the midst of so many charms and virtues.

It has been said that the humorous women of Shakespeare are feebly drawn in comparison with the female wits of other writers, and that this is so because his women of wit and humor are not introduced for the purpose of saying brilliant things or of displaying the wit of the author; they are real, natural women in whom wit is only a particular and occasional modification of the intellect. They are essentially, affectionate, thinking beings, and moral agents and then witty as if by accident. As to humor, it is carried as far as possible in Mistress Quickly, in the turbulent Katherine, in Maria in "Twelfth Night," in Juliet's nurse, in Mistress Ford and Mistress Page, who are both "merry-wives." It may be said that the humor in all these instances is more or less vulgar; but a humorous woman, whether in high or low life, has always a tinge of vulgarity of an agreeable kind.

In the characters of Beatrice and others of Shakespeare's women there is a touch of coarseness of manner belonging to the age in which he wrote. To remark that the conversation and letters of high-bred and virtuous women of that time were more bold and frank in expression than any part of the dialogue appropriated to Portia, Rosalind and Beatrice may excuse it to our judgment, but does not reconcile it to our taste. It is, however, a mere difference of manner which is to be regretted, but has nothing to do with the essence of the character.

In the female characters of Shakespeare there are many beautiful pictures of feminine friendships, and of the generous affection of women for each other. Shakespeare who looked upon women with the spirit of humanity, wisdom and

deep love, has done justice to their natural good tendencies and kindly sympathies. In the friendship of Beatrice and Hero, of Rosalind and Celia; in the description of the girlish attachment of Helena and Hermia, he has represented truth and generous affection rising superior to all the usual sources of female rivalry and jealousy. Add to these the generous feeling of Viola for her rival Olivia; of Julia for her rival Sylvia; of Helena for Diana; of the old Countess (the widow) for Helena in the same play, ("All's Well that Ends Well"), and even the affection of the wicked queen in Hamlet for the gentle Ophelia, which prove that Shakespeare thought that women have by nature "virtues that are merciful, and can be just, tender, and true to their sister women, whatever wits, satirists, and fashionable poets may say to the contrary."

Another thing which he has most deeply felt and beautifully represented is the distinction between masculine and feminine courage. A man's courage is often a mere animal quality and in its most elevated form a point of honor. But a woman's courage is always a virtue, because she is courageous through her affections and mental energies, not through her vanity or her strength. A woman's heroism is always the excess of sensibility. This is the courage of Juliet, when summing up all the possible consequences of her own act, till she almost maddens herself with terror and drinks the sleeping potion; and for that passive fortitude which is founded in piety and pure strength of affection the poet has given us some of the noblest modifications in the characters of Hermoine, in Cordelia, Imogen, and in Katherine of Aragon.

In Volumnia, the mother of Coriolanus, Shakespeare has given us the portrait of a true Roman matron. Her lofty patriotism, her patriotic haughtiness, her maternal pride, her eloquence, and her towering self-will, are exhibited with the utmost power of effect, yet the true female nature is preserved. Precisely the same qualities enter into the character of Constance of Bretagne. The character of Octavia is merely indicated in a few touches, but every stroke tells. We see her with downcast eyes, sedate and sweet and looks demure, with her modest tenderness and dignified submission — the very antipodes of her rival, Cleopatra, who is haunted by the fear that she should be "chastised by the sober eyes" of Octavia.

The character of Cleopatra ("Antony and Cleopatra") is said to be the greatest miracle of Shakespeare's productions. Cleopatra is a brilliant antithesis, a compound of contradictions, of all that we most hate, with what we most admire, a consistent inconsistency, remarkable for its complexity. Her mental accomplishments, her unequalled grace, her woman's wit and woman's wiles, her irresistible allurements, her starts of irregular grandeur, her bursts of ungovernable temper and petulant caprice, her vivacity of imagination, her fickleness, her tenderness and her truth, her childish susceptibility to flattery, her magnificent spirit, her royal pride, the gorgeous eastern coloring of the character — all these contradictory elements has Shakespeare seized, mingled and fused them into one brilliant impersonation of classical elegance, oriental voluptuousness, and gypsy sorcery.

Consult "Women of Shakespeare," by Louis Lewis, G. P. Putnam's Sons, New York; "Characteristics of Women," by Mrs. Jameson, Houghton, Mifflin & Co., New York; "Shakespeare's Female Characters," by Helen Faucit, Lady Martin; "The Girlhood of Shakespeare's Heroines," by Mary Cowden Clarke; Anna Jameson's "Shakespeare's Heroines;" Hazlitt's "Lectures on the Characters of Shakespeare's Plays;" Lamb's "Tales from Shakespeare;" and Blackwood's Magazine, volumes 129 and 133.

[CORRESPONDENCE]

THE MISSISSIPPI RIVER AGAIN.

Having learned to appreciate the learning, care and discriminating taste displayed in the "Inquiries Answered" department of SELF CULTURE, I was much surprised on opening the July number to find you had modified the explicit and correct answer to the query, "Does the Mississippi flow uphill," given in your May number, not only giving a *quasi* endorsement of the views of your correspondent E. T. Brown of Chicago, but practically abandoning your whole contention by admitting that the river, "if we regard the earth's spheroidal form," does run uphill, *i. e.* gets farther away from the centre.

In point of fact the waters of the Mississippi approach nearer the centre of the earth at every point of their descent towards the Gulf. That the editor of SELF CULTURE may have admitted too much in this matter is only an additional proof that even "Jupiter may sometimes nod."

While the general form of the earth is spheroidal, it is not uniformly so. There are elevations and depressions, hills and valleys, and longitudinal and transverse troughs, like the Mississippi and St. Lawrence valleys. Now in the 40° that intervene between the source of the Mississippi and the North pole, there is a great local elevation, probably exceeding five miles, and culminating at the "Height of Land." The Mississippi rises on the south slope of this local

elevation and simply gravitates into the Gulf. While the *mouth* of the Mississippi may be 4¼ miles farther from the centre of the earth than the North pole, the *source* is 4¼ miles *plus* the ⅓ mile (some of its tributaries fall two miles) which it descends.

Centrifugal force is scarcely an appreciable factor in the flow of rivers. Should the earth's rotation cease in a moment the Red River of the North and Mackenzie River would continue to gravitate *directly* into the Arctic Ocean, while the Mississippi would continue to flow into the Gulf and thence *with the waters of the Gulf*, would flow away toward the poles, unless arrested by some mountain barrier. I think no "abstruse mathematical principles" are involved in this problem, and that rivers flow by gravitation going North, South, East or West according to the "lay of the land" as witness the Mackenzie, St. Lawrence, and Mississippi, which all head near each other and flow to three cardinal points of the compass without any figuring. GEO. T. MCWHORTER, M.D.

A correspondent, writing from Riverton, Alabama, takes SELF CULTURE to task for its endorsement of the letter relating to the flow of the Mississippi River published in the July number. Our correspondent says, among other things, that "in point of fact the waters of the Mississippi approach nearer the centre of the earth at every point of their descent toward the Gulf," and that, therefore, they run downhill, in whatever sense we take "up" and "down."

Our correspondent is mistaken in his "point of fact," from whatever source he may have obtained it, and we should, in the language of diplomacy, "consider the incident closed" were it not that there seems to have been awakened among our readers an interest in this question of physical geography sufficiently great to warrant a more explicit treatment of the subject.

Let us begin with a distinct understanding that no river flows uphill with reference to the sea-level, and it is from this level that all heights are measured in geography. At every point in its course, from its source until it reaches the Gulf of Mexico, the Mississippi stands above the level of the sea in the same latitude, and in its flow southward it gradually approaches this level, reaching it at the Gulf. But the sea-level itself, — here is the source of the trouble. Because of the ellipsoidal figure of the earth, this level is thirteen miles farther from the centre of the earth at the equator than at the poles. It is a sort of inclined plane; in other words, the sea lies upon a side-hill, a fact which, when we think of it, is quite as wonderful as that a river should flow uphill. What keeps it there? What prevents its waters from running down to the base of the hill, at the poles?

A very simple experiment, which can be tried with a teacup nearly filled with water, will make this matter perfectly clear. With a teaspoon set the water in the cup to swirling rapidly; then remove the spoon and watch the swirling water. Its surface is hollowing; the water rises at the side of the cup to, perhaps a quarter of an inch above its level when at rest. There seems to be a pressure in the water exerted from the centre outward against the side of the cup, which crowds the water there upward against the force of gravity. This pressure is centrifugal force — the same force which causes the water to fly from the surface of a grindstone, when the stone is turned rapidly. It is due to the tendency of a moving body to move in a straight line, and its resistance to being forced into a curved path. Suppose that the earth were a solid globe of a perfectly spherical figure, enveloped everywhere in a deep sea, and that it were not rotating, but were at rest. The surface of the sea would form a perfect sphere, every point of it being equally distant from the centre. Now set the earth to rotating. The same force which drives the water in the cup against the side of the cup would act to force the earth's ocean away from the centre of motion at the poles, and the consequence would be a massing of the water in the equatorial regions. The surface of the sea would assume an ellipsoidal figure, as can be proved by mathematics. If the earth, instead of being solid, as above supposed, were a plastic, yielding mass, then the whole earth, land as well as water, would assume this ellipsoidal figure. It is the only figure possible for a rotating plastic body to assume; and there is no doubt among scientists that it was in this way that the earth got its present form. The planet Jupiter, which rotates nearly two and a half times as fast as the earth, is so far from being globular in shape that its elliptical figure is very noticeable through even a small telescope.

Stop the rotation of the earth, and the sea will flow away from the equator toward the poles; but so long as the earth rotates at its present rate the sea must preserve its present level. In the latitude of 28 degrees, at which the Mississippi enters the Gulf of Mexico, this level is 2.15 miles farther from the earth's centre than in latitude 38 degrees, at which the Missouri enters the Mississippi. At this point the river is but 416 feet above the sea level. It is therefore at this point over two miles nearer the earth's centre than at its mouth. With this statement of fact we close the discussion.

ED. S. C.

NEW INFORMATION NOTES

Adamantine wood-protector: Melt in an iron vessel fifty parts of rosin, and stir in fifty parts of chalk, fifty parts of fine sand, and six parts of linseed oil. When well mixed, add one part of copper oxide, and again carefully mix. Apply to the wood hot, using a stiff brush for the purpose.

An effective insecticide for various insect pests on greenhouse plants is composed of methylated spirit, two hundred parts; soft soap, twenty parts; quassia-wood, six parts; salicylic acid, two and a half parts. Macerate for several days; dilute with sufficient water, and apply to the infested parts by means of a brush. Allow to dry on; the following day wash off with plenty of water.

Fruit-stains, when fresh, may be removed by pouring boiling water through the stained portion until the stain disappears. Old fruit-stains may be removed with oxalic acid. Wash the stained portion in the acid till clear; rinse at once in rain-water, as the acid will attack the fabric if left upon it. Then wet the spot in ammonia, and give a final rinsing.

Do not sleep with the eyes facing the light. A test by closing the eyes when facing the light quickly shows that the strain is only lessened, not removed, and the interposition of an adequate shade is as grateful to the shut eyes as when they are open. It is sometimes necessary in a small room to have the bed face the window; but even then, by means of shades rolling from the bottom instead of from the top, the window may be covered to the few inches left free for the passage of air.

There is a curious paper in the "Contemporary Review" upon English millionaires. Between 1887 and 1896 32 persons died whose personal estates were estimated for probate at an average of £1,500,000 each. Of these only four were peers—Lord Wolverton (Glyn's Bank), the Duke of Cleveland (Durham coals), the Duke of Sutherland (Staffordshire minerals), and the Earl of Derby (house property in Liverpool and its suburbs). Nine millionaires were baronets, all traders except one, Sir R. Wallace, who derived his fortune from the vast property of the Hertford Seymours. The richest of these was Sir A. Barclay Walker, the Warrington brewer (£3,000,000), and the next richest Sir Charles Booth, the gin distiller (£2,000,000). Of untitled hereditary landowners there were but two. No manufacturer of anything to eat has left £1,000,000, and only three manufacturers of textiles. Two chemical manufacturers were millionaires, two machinists, seven financiers, one contractor, and one newsagent, who was also leader of the House of Commons, who left nearly £2,000,000, by far the greatest fortune ever made by any trader in literature.

The Persian Gulf, it would seem, presents some curious phenomena. Recently, in an inaugural address as president of the Institution of Electrical Engineers, Sir Henry Mance, referring to the development of oceanic telegraphy, said that in the Persian Gulf one occasionally witnessed natural phenomena which to the untravelled might appear incredible. In the midst of the mountains near Mussendom he had seen during a thunderstorm such displays of lightning as baffled description. He had, at certain seasons of the year, observed the water in the bay—which was large enough to hold all the fleets of the world—present exactly the appearance of blood. Not many miles from Mussendom he had witnessed mysterious fire circles flitting over the surface of the sea at a speed of 100 miles an hour—a phenomenon which no one had yet been able to explain. While steaming along the coast of Beluchistan, he had been called from his cabin at night to observe the more common phenomenon of a milky sea, the water for miles around being singularly white and luminous. In the same locality the sea was, for short periods, as if putrid, the fish being destroyed in myriads, so that to prevent a pestilence measures had to be taken to bury those cast up on the beach. This phenomenon was doubtless due to the outbreak of a submarine volcano and the liberation of sulphureted hydrogen. In these waters jellyfish were as large as footballs, and sea snakes of brilliant hue were met with in great numbers.

The scientific as well as popular effect, writes a subscriber, who was interested in our article on the first Secretary of the Smithsonian Institution, published in SELF CULTURE for July, of Professor Henry's first paper in Silliman's Journal was immediate and great. With the same battery that Sturgeon used he developed at least a hundred times more magnetism. The instantaneous production of magnets lifting four hundred and twenty times their own weight, of those which with less than a pint of dilute acid acting on two hands' breadth of zinc would lift seven hundred and fifty pounds; and this afterward carried up to a magnet lifting thirty-three hundred pounds, was simply astonishing. Yet it was not these extraordinary results, nor their mechanical applications, which engaged Professor Henry's attention so much as the prospect they opened of a way by which to ascend to higher discovery of the laws of nature. In other hands, his discoveries furnished the means by which diamagnetism, magnetic effects on polarized light, and magneto-electricity—now playing so conspicuous a part—soon came to be known.

"In his own hands, the immediate discovery of the induction of a current in a long wire on itself (announced in the 'American Journal of Science and the Arts' in 1832), led the way to his next fertile field of inquiry, the following up of which caused unwise tardiness in the announcement of what he had already done. For it is within our knowledge that the publication of the paper which initiated his fame had been urged for months by scientific friends, and at length was hastened by the announcement of some partly similar results reached in a different way by Moll, of Utrecht.

"In a letter not long afterward written to one of us, Professor Henry had occasion to declare: 'My whole ambition is to establish for myself *and to deserve* the reputation of a man of science.' Yet throughout his life ardor for discovery and pure love of knowledge were unattended by corresponding eagerness for publi-

cation. At the close of that very year, 1832, however, he did announce the drawing of a spark from a magnet, that first fact in magneto-electricity, and, as he supposed, a new one. But he had been anticipated."

Herr Mauser, the inventor of the well-known rifle bearing his name, has submitted to the War Office of Germany a new mechanism that is applicable to pistols and carbines and which makes it possible to fire ninety shots a minute. He asserts that it will revolutionize small arms. The chief feature of the invention is the rapid, automatic rejecting of the spent cartridge.

Investigations recently made in Germany show that the average locomotive has to be withdrawn from service after travelling about 500,000 miles. This does not include the time the locomotive is under her own steam without pulling a train. During the period a locomotive is in service a number of parts have to be repaired or renewed. For instance, the boiler and fire-box have to be renewed three times, the tires of the wheels five or six times, the driving cranks from three to five times. After a half-million miles of active service the average locomotive is no more worth repairing and is entirely withdrawn.

Driving away mice from infected cellars is an easy matter when oil of turpentine is used. It seems that the little rodents have a very pronounced antipathy for the odor, and some woollen rags soaked in oil of turpentine and placed in front of the holes by which mice enter will keep them away. If this experiment is repeated for several weeks it will eventually keep the mice away entirely.

The public schools of some States have adopted a State flower. The golden-rod is claimed by Nebraska, Oregon, and Alabama; Colorado has selected the wild columbine; Delaware, the peach blossom; Idaho, the white syringa, sometimes called the "bride's flower;" New York and Iowa, the rose; Vermont, the clover; North Dakota, the wild rose; Maine, the pine cone and tassel; Minnesota, the moccasin flower; Montana, the bitter root; Utah the lily; Oklohoma, the mistletoe; Rhode Island, the violet; and Wisconsin, in lieu of a flower, has chosen the maple tree.

The monument erected in Chicago in honor of Gen. John A. Logan, was unveiled on July 22. About 20,000 state troops, regulars, G. A. R. men, ex-Confederates, and members of civic organizations paraded. The memorial is an equestrian statue of great size mounted on a granite pedestal.

Silver bullion was quoted in New York in the middle of July at 59½ bid, the lowest price on record. A year ago the price was 69¼. The low price of silver is attributed mainly to the increase in the world's production. From 1886 to 1890 the production was estimated at 557,500,000 ounces, the production from 1891 to 1895 was 793,000,000 ounces. Exports of silver for the last twelve months are valued at $61,946,638 against $60,541,670 in the year preceding, and $47,295,286 in the twelve months ending with June, 1895. From a mere examination of quotations "it might be logically concluded that there is no connection between the prices of silver and wheat, for a year ago wheat was selling at 63⅛ cents a bushel while the other day it reached 86⅝ cents."

Eggs, says the "Medical Record," are useful in the following applications: A mustard plaster made with the white of an egg will not leave a blister. A raw egg, taken immediately, will carry down a fishbone that cannot be extracted. The white skin that lines the shell is a useful application to a boil. White of egg, beaten up with loaf sugar and lemon, relieves hoarseness, a teaspoonful taken once every hour. An egg in the morning cup of coffee is a good tonic. A raw egg, with the yolk unbroken, in a glass of wine, is beneficial for convalescents.

As one of the results of Nansen's north pole expedition, we see a number of similar undertakings planned by several individuals. First, a Frenchman, the engineer Andrée, expected to reach the Pole by balloon from Sweden. From Spitzbergen the two French aëronauts Godard and Surcouf, expect to depart, also by balloon, for the north pole, in the summer of 1898. The same season also Nansen's ship, the Fram, is once more to set sail under Capt. Sverdrup, the same who so successfully took command of the vessel on the last occasion.

The cost of the proposed Black sea and Baltic canal is estimated at $100,000,000. The route is from the Gulf of Riga, on the Baltic, along the rivers Duna, Beresina, and Dnieper to Cherson, on the Black sea, northwest of Sebastopol, a distance of 994 miles. The depth proposed is 28 feet, so that warships may be able to traverse the canal from one sea to the other. A height of 511 feet would have to be overcome, necessitating, of course, the use of locks. Considerable trade would be developed by such a canal. Its early construction is, however, not well assured, though Russia has $650,000,000 in gold in her war chest.

The newspapers report the results of some interesting experiments by Dr. C. P. Carver, of St. Augustine, Fla., to ascertain the sugar producing properties of the watermelon. The experimenter has so far found that he can extract a fine taffy candy sugar at the proportion of one ounce to eight ounces of the melon pulp without the rind. Dr. Carver is going to ascertain the proportion of saccharine matter in the whole watermelon, for he believes from experiments he has made that a large quantity can be extracted from the rind, as well as the pulp or heart of the melon. He says he is positive a sugar of superior delicacy can be made from the melon.

After experiments with more than sixty machines an apparatus has now been perfected that will spin a fine silk from the fibrous stalks of nettles. Great difficulty was encountered in removing the bark and in extracting the resinous gum that sticks the fibres together. But now a remarkably strong silk is spun from the commonest weed that dots the roadside.

Sunstroke, says an authority in the Health Department of New York City, is caused by excessive heat, and especially if the weather is "muggy." It is more apt to occur on the second, third, or fourth day of a heated term than on the first. Loss of sleep, worry, excitement,

close sleeping-rooms, debility, over-heating, and the use of liquor in any form, predispose to it. It is more apt to attack those working in the sun, and especially between the hours of eleven o'clock in the morning and four o'clock in the afternoon. On hot days wear thin clothing. Have as cool sleeping-rooms as possible. Avoid loss of sleep and all unnecessary fatigue. If working indoors, and where there is artificial heat — laundries, etc.,— see that the room is well ventilated. If working in the sun, wear a light hat (not black, as it absorbs heat), straw, etc., and put inside of it on the head a wet cloth or a large green leaf; frequently lift the hat from the head and see that the cloth is wet. Do not check perspiration, but drink what water you need to keep it up, as perspiration prevents the body from being overheated. Have, whenever possible, an additional shade, as a thin umbrella, when walking, a canvas or board cover when working in the sun. When much fatigued do not go to work, but be excused from work, especially after eleven o'clock in the morning, on very hot days, if the work is in the sun. If a feeling of fatigne, dizziness, headache, or exhaustion occurs, cease work immediately, lie down in a shady and cool place; apply cool cloths to and pour cold water over the head and neck.

A writer in the New York "Journal of Hygiene," has been treating of sprains and the remedies to apply to them. These are rest for the injured member, applications of electricity once a day for five to seven days, and massage. In most instances, he says, my patient can use the injured joint with freedom at the end of a week. I regard this mixed treatment as the best that has come to my notice; it gets the patient well in a shorter time than the old method of liniments, and saves him days of suffering. The patient presents himself with a joint highly inflamed, extremely sensitive to the touch, and full of pain. At once use the faradic current of tension for a period of thirty minutes. At the end of that time the temperature of the joint is lowered, the pain has disappeared, and the joint can be freely handled. Then begin massage, commencing at the elbow if the injured joint is the wrist, or the knee if it is the ankle, and continue for five minutes. This is to be repeated twice during the day by some member of the family.

Everybody has heard of the wisdom of keeping the mouth closed and breathing through the nostrils in damp, foggy weather, but many cyclists declare they are unable to do this, though it is perfectly easy to them in warm weather. The difficulty arises chiefly from the fact that riders start off too quickly, and thereby soon become breathless.

Paste for preserving the gloss of patent leather: Melt pure wax over a water-bath, place on a moderate coal-fire, add first some olive-oil, then some lard, and mix intimately by stirring; next add some oil of turpentine, and finally some oil of lavender. Place the resulting paste in boxes, where, on solidifying, the necessary consistency will be acquired. To restore the gloss to the leather, apply a little of the paste and rub with a linen rag. This will keep the leather soft and prevent cracking.

Camphor is made in Borneo and Sumatra, and is so much esteemed in the East that even in the markets of Japan two hundred pounds of the camphor of the latter country used to be given in exchange for one pound of the product of Borneo and Sumatra. The Bornean camphor is white, like chalk, but has the same smell and taste as that which is produced in China and Japan. The natives ascribe extraordinary medicinal virtues to it, and frequently hang it powdered in bags around their necks, or round their waists, wrists and ankles.

The use of ice in small quantities, frequently repeated, is very general in many diseases, but it is found difficult to keep it from melting, especially when in small blocks. To obtain this result, the ice should be put into a vessel and covered with a plate, and the vessel should be placed on a feather-bed, and covered with a feather pillow or cushion, feathers being almost non-conductors of heat. By this plan a few pounds of ice can be kept for several days, even in summer heat.

Dr. Nansen's most important discovery on his recent voyage was perhaps the existence of a very deep sea at the Pole. Some geographers believed that the Polar Sea would not much exceed one hundred and fifty fathoms; others argued that, since there was a continent at the South Pole ten thousand to fifteen thousand feet high, there might be a corresponding depression at the North Pole. As a matter of fact this was about the depth found by Nansen. Consequently M. de Lapparent argues that the true figure of the earth is like a pear, not like an orange, as we are taught in the school-book, the pointed end of the pear being at the South Pole.

There are colours that are refreshing and broadening, others that absorb light and give a boxed-up appearance to a room, others that make a room with a bleak, northern aspect appear bright and cheerful; some that make a room appear warm, some that make it cold. The thermometer seems to fall six degrees when you walk into a blue room. Yellow is an advancing colour; therefore a room fitted up in yellow will appear smaller than it is. On the other hand, blue of a certain shade introduced generously into a room will give an idea of space. Red makes no difference in regard to size. Green makes very little. If a bright sunny room gets its light from a space obtruded upon by russet-coloured or yellow painted houses, or if it looks out upon a stretch of green grass, it should be decorated in a colour very different from the shade chosen if the light comes from only an unbroken expanse of sky. Red brings out in a room whatever hint of green lurks in the composition of the other colors employed. Green needs sunlight to develop the yellow in it and make it seem cheerful. If olive or red-brown be used in conjunction with mahogany furniture, the effect is very different from what it would be if blue were used. Blue would develop the tawny orange lurking in the mahogany. If a ceiling is to be made to appear higher, leave it light, that it may appear to recede. Deepening the color used on the ceiling will make it appear lower — an effect desirable if the room is small and the ceiling very high. Various tones of yellow are substitutes for sunlight.

THE WORLD OF THOUGHT:

ABOUT BOOKS AND THEIR AUTHORS

THE author of "Looking Backward" has, as we think, made a mistake in writing a sequel to that much-lauded work. Mr. Bellamy's new social vision, which he labels "Equality," is a much less readable book than the dream-world to which he introduced us eight or nine years ago: in truth the new work seems to us, in parts at least, intolerably wearisome, prosy and dull. Nor, to the healthy and well-ordered mind, is the coming age of the political prophet's imagination anything else than wearisome, prosy and dull. The whole race, and both sexes, are, it would seem, to be thrust into one mammoth government hopper and to issue from it scientific and social prigs, of the most uninteresting and unenlivening character, without the variety and attractiveness which now give charm to life, and hopelessly reduced to one uniform grade of equality. Even the dress of men and women, in the new Utopia, is to be the same, and of material so cheap, and shall we not say nasty, that when once worn the bloomer-like garment is to be thrown away rather than be sent to the national laundry. But think of the monotony of the whole scheme, when the Government is to undertake for every one, and all will be wise, health-whole and good!

Mr. Bellamy's Utopia

Nor is the blissful state of things to be brought about by a slow and gradual evolution. On the contrary, we are suddenly to jump into the new era and find — conceive of the thing! — not only a paternal, but an immaculate, government, which is to be the universal employer, paymaster, purveyor, educator, and general provider. Science, as in Lord Lytton's "Coming Race," is to do everything for us; even our recreations are to be automatic, and our amusements to be found in sitting at a theatre, electroscope and telephone in hand, while we hear and see a performance say, at Klondyke or Honolulu. For this beatific state in the coming century, mankind is to exchange all the conditions that make our present existence — which to Mr. Bellamy's distorted imagination is a dreadfully unregenerate and odious one — agreeable and pleasant, and agreeable and pleasant chiefly because of the effort of the best souls contentedly to make it so.

Yet we would not say an unnecessarily discouraging word of Mr. Bellamy or of his enthusiastic but presumedly well-meaning fellow-dreamers. Doubtless they are all genuine friends of humanity, though we would hesitate to rank them as the seers and saviours of the race. All we would ask is, are they fair in their pessimistic denunciations of the present order of things, and do they offer us, in lieu of it, a practical and possible substitute? Is the projected new dispensation not wholly a dream, and in an age like ours is there any use in dreaming? We can, of course, all of us imagine a better world than the present; but *cui bono?* when we have to live and work prosaically in this. To get rid of inequalities in our lot — inequalities of rank, labor and position — may perhaps be better all round than individual surfeits of wealth, though we fear, we should suffer frightfully from ennui if we were all turned out from one common mould. Besides, can we trust the State to assume the prerogatives with which the social Utopians would endow it? Would any sane man vest unlimited powers in the demagogues and trading politicians we are to-day only too familiar with? Even if we had, universally, a higher type of legislator, could you trust his intelligence with the fit distribution of work alike to the navvy, the factory hand, and the brain worker, or expect each of the latter to be contented with his assigned duties or with the dole of a common pay? A uniform *pro rata* apportionment of income looks pretty on paper, but, with human nature as we know it, would it be a feasible and workable arrangement? Would it not handicap industry, and withhold from ambition the incentive to labor, whether it be of fame or money accumulation? We are not lacking in sympathy with well-devised and intelligently ordered philanthropic effort; but is not humanity mocked instead of benefited by setting before it fantastic ameliorations and visions of impossible Utopias?

G. M. A.

Dean Farrar on the Bible

The literature of Christian apologetics has had a valuable contribution made to it the other day, in a new work by the industrious and learned writer, Dean Farrar. The work treats of "The Bible, Its Meaning and Supremacy" (London and New York: Longmans & Co.), and in these days of mental revolt, even in the churches, against Revelation, it is interesting to note what a scholarly yet broad-minded churchman has to say of the Scriptures and their authority, and on the cognate topics of inspiration and the supernatural. The Dean approaches his subject in a fair-minded and judicial temper, at the outset adjuring the clergy that the policy of obscurantism, or hindering the spread of enlightenment, is now impossible. Nor must they think, he adds, to escape the difficulties of doubt and unbelief either by ignoring or by denouncing them. Reviewing the book in a late issue of the London "Spectator," a writer in that excellent and thoughtful journal remarks, that there are quarters in which "the unquestioning temper which was common fifty years ago still prevails, and there are exceptional persons who, whether from mental inactivity or from the absorbing interest of the spiritual aspect of religion, retain an undisturbed acquiescence in traditional views. With these a wise man will not meddle. But, generally, the clergyman must be prepared to meet attack, and the first necessity of preparation is to face the difficulties himself, to make up his mind, first, as to what he believes himself, and, second, as to what he is bound to exact from others. It is for those who have this task imposed upon them that Dean Farrar's volume is primarily intended. It is essentially a *concio ad clerum* (discourse to the clergy). As such it cannot fail to be helpful. It is definite, and it is courageous. It marks out what may fairly be described as a tenable position. At the same time, it leaves something to be desired, especially in its dealing with individual difficulties. These may be ranged under three heads,—Inspiration, Morality, Miracle. Let us take the third of the three first. Dean Farrar's general confession of faith is excellent. He says:—

"I am not one of those who feel any doubt that God has, on due occasions and for adequate purposes, in the days of the Old as well as in the days of the New Dispensation, made Himself signally and supernaturally manifest in the affairs of men. I withhold my credence from no occurrence—however much it may be called 'miraculous'—*which is adequately attested; which was wrought for adequate ends; and which is in accordance with the revealed laws of God's immediate dealings with man.*"

And when he proceeds to deal with particular passages, he expresses himself with much eloquence and force. Take, for instance, what he says about the story of the Fall:—

"The inspired character of the narrative is to me evinced by the fact that all the literature of the world has failed to set forth for human warning any sketch of the course of temptation which is comparable in insight to this most ancient allegory. Yet all the literature of the world, even when it speaks through the genius of a Dante and a Milton, has added, and can add, nothing essential to the primeval story of Genesis, which it can but illustrate and expand."

Nor have we any fault to find with his treatment of the stories of Babel, of Balaam's Ass, of Joshua at Ajalon (why, he asks, take this more literally than such phrases as "the stars in their courses fought against Sisera" or "the hills melted like wax at the presence of the Lord?").

The Dean's views on inspiration are, we may suppose, though he does not expressly say so, set forth in the following passage:—

"The fourth theory may be described as that of general inspiration. Those who hold it do not regard the inspiration of the sacred writers throughout the *whole* extent of Scripture as more extraordinary, transcendent, and supernatural in kind, nor even always in degree, than that which is vouchsafed to other noble and holy souls. This view, of which Schleiermacher may be regarded as the foremost representative, looks upon Biblical inspiration as a thing entirely subordinate in the divine economy."

On the subject of Progressive Morality Dean Farrar expresses himself with decision:—

"It cannot be too distinctly understood that we are free to judge from the standpoint of Christianity every page and every verse of the Old Testament which falls below the rule which Christ set forth. If dark deeds are ascribed to God's command, we can only suppose that, to the defective knowledge of them of old time, those deeds appeared to be in accordance with His will. Nothing can be regarded by us as the message of God which the Spirit of the Son of God has taught us to reject and to condemn."

That about covers the whole case. We have not improved, and never can improve, on the Ten Commandments. But no other utterances which appear in the Old Testament as commands, the injunction to Joshua to exterminate the Canaanites, the similar bidding to Saul to entirely destroy Amalek, stand at all on the same footing. The giving of the Commandments is expresely surrounded with a solemnity of circumstances which is not found elsewhere. Or, to put the matter in another aspect, this is represented as an objective Revelation; all the others may well have been subjective impressions."

EDUCATIONAL STUDIES FOR YOUTH:

SYNONYMS DISCRIMINATED (CONTINUED)

THE interest expressed, in varied quarters, in the subject matter of our last month's studies, induces us to make a further selection of examples of Synonyms Discriminated. We are asked, in connection with the subject, how the student of English can best attain propriety and precision of diction, and we answer that there is no more effective way than by observing and imitating the usage of the best writers and speakers of the time. The exactitude of an author's style is, in large measure, determined by his appreciation of the meaning and force of words and of the niceties and subtle shades of differences between them. This appreciation enables him best to express the exact sense of his thought, and to do this with fitness as well as with strength and elegance. A good and copious vocabulary is a great gain to a speaker or writer, while poverty of speech is a sure sign of deficient education. G. M. A.

SELECTED EXAMPLES.

Candid, *adj.* (*Lit.* white, bright, clear), *Figuratively* free from malice, or from any intention to deceive.

Syn.: frank, fair, open, sincere, ingenuous.

Ant.: reserved, close, disingenuous, insincere.

Syn. dis.: "*Candor* arises from a conscious purity of intention; *openness*, from a warmth of feeling and a love of communication; *sincerity*, from a love of truth. A *candid* man will have no reserve when *openness* is necessary; a *sincere* man will maintain a reserve only as far as it is consistent with truth. *Frankness* and *candor* may be either habitual or occasional; *ingenuousness* is a permanent characteristic." *Candor* may refer to our judgment of others.

Captious, *adj.*, disposed to find fault; apt to cavil or raise objections; cross-grained.

Syn.: peevish, fretful, petulant, carping, censorious.

Ant.: appreciative, commendatory, laudatory, approving.

Syn. dis.: "*Captious* marks a readiness to be offended; *cross* indicates a readiness to offend; *peevish* expresses a strong degree of crossness; *fretful*, a complaining impatience; *petulant*, a quick or sudden impatience or capricious peevishness." Another writer aptly defines *captious* as "given to catching at defects or objections," and *cross*, as exhibiting a consciousness, with or without grounds, of being thwarted. *Cross-grained* is that characteristic trait or disposition which "finds adversity in opposition in every circumstance and person."

Care, *n.*, thoughtful attention; uneasiness of mind; caution.

Syn.: concern, regard; solicitude, anxiety; charge, management.

Ant.: inattention, neglect, indifference, disregard, carelessness.

Syn. dis.: "*Care* and *concern* consist both in thought and feeling; but the latter has less of thought than feeling; *regard* consists of thought only. *Care*, *solicitude* and *anxiety* express mental pain in different degrees; *care* less than *solicitude*, and less than *anxiety*. *Care* respects the past, present, and future; *solicitude* and *anxiety* regard the present and future. *Care* will include both *charge* and *management*; but, in the strict sense, it comprehends personal labor; *charge* involves responsibility; *management* includes regulation and order."

Cautious, *adj.*, very careful in conduct, discreet, watchful.

Syn.: wary, circumspect; vigilant, watchful.

Ant.: rash, hasty, unguarded, reckless.

Syn. dis.: "The epithets *cautious*, *wary*, *circumspect*, denote a peculiar care to avoid evil or trouble; but *cautious* expresses less than the other two. It is necessary to be *cautious* at all times; to be *wary* in cases of peculiar danger; to be *circumspect* in matters of peculiar delicacy and difficulty." *Vigilant* denotes being keenly on the alert, and expresses a high degree of *watchfulness* or *wariness*.

Chance, *n.*, that which happens without being contrived, intended, or foreseen; accident, opportunity.

Syn.: fortune, fate; probability; hazard; accident.

Ant.: law, rule, sequence, purpose, design, certainty.

Syn. dis.: *Chance* is the generic, *fortune* and *fate*, the specific, terms: *chance* applies to all things, personal or otherwise; *fortune* and *fate* are mostly said of that which is personal. *Chance* and *probability* are both employed in forming an estimate of future events; but the *chance* is either for or against; the probability is always for a thing. *Chance* and *hazard* are terms employed to mark the course of future events, which is not discernible by the human eye. *Chance* denotes a hidden senseless cause of things, as opposed to a positive intelligent cause; *accident* is used only in respect to particular events, as it was pure *accident*.

Character, *n.*, personal qualities or attributes, good or bad; a man's moral and mental constitution.

Syn.: reputation, credit, temperament.

Syn. dis.: "*Character* lies in the man: it is the mark of what he is; it shows itself upon all occasions; *reputation* depends upon others; it is what they think of him. A *character* is given particularly; a *reputation* is formed generally." "*Character* is used of the whole complex constitution of a man's personal qualities. It therefore exists anterior to and independent of his *reputation*. It is possible for a man to have a fair *reputation* who has not in reality a good *character*; although men of really good *character* are not likely to have a bad *reputation*." "*Credit* is that trustworthiness which is based

upon what is known of *character* (*credere*, to trust), and relates both to right conduct and the truth of propositions. *Credit* may be given on specific occasions only; *character* and *reputation* are permanent."

The two latter terms are often used indiscriminately, without noting that *reputation* is really the result of *character; character* representing what one essentially is, and *reputation*, the estimation in which one is held. One leaves behind him a *reputation*, good or bad, *not* a *character*. The etymology of the two words will help to distinguish them in the minds of those apt to confuse the terms; *character* signifies an impression or mark, and, figuratively, the word is employed for the moral mark which distinguishes one man from another; *reputation* comes from the Fr. *reputer*, Lat. *reputo*, to think, and signifies what is *thought* of a person.

Claim, *n.*, a demand for anything as one's due or right.

Syn.: demand, right, pretension, privilege, prerogative.

Ant.: disclaimer, surrender, abjuration.

Syn. dis.: "*Claim* supposes an acknowledged right, *demand*, either a disputed right or the absence of all right, and a simple determination to have it. *Right* is not, like *claim* and *demand*, developed, but lies, as it were, dormant. It is the latent power to claim or demand upon occasion. *Pretension* is the holding out the appearance of right or possession, without directly urging it. *Privilege* is a right, immunity, or advantage possessed by some, but not enjoyed by others. *Prerogative* denotes a right of precedence, or of doing certain acts, or enjoying certain privileges, to the exclusion of others."

Common, *adj.*, pertaining or relating to all in general; of inferior character or quality.

Syn.: vulgar, ordinary, mean, commonplace, universal.

Ant.: unusual, rare, exceptional, refined, infrequent, unique.

Syn. dis.: "Familiar use renders things *common*, *vulgar*, and *ordinary;* but what is *mean* is so of itself. *Common* is unlimited in its application; it includes both *vulgar* and *ordinary*." * * "*Common* is opposed to rare and refined; *vulgar*, to polite and cultivated; *ordinary*, to the distinguished; *mean*, to the noble; *commonplace*, to the unique and striking; *universal*, to the local and particular." *Vulgar* implies pretension and often manifests itself in ostentatious display and the offensive parade of wealth and social position.

Compensation, *n.*, what is given to supply a loss or make good a deficiency.

Syn.: remuneration, recompense, requital, reward, satisfaction.

Ant.: depravation, injury, nonpayment, damage.

Syn. dis.: "A *compensation* is something real; it is made for bodily labor, or for some positive injury sustained; in the latter case, justice requires that it should be equal in value, if not like in kind, to that which is lost or injured. *Remuneration* is made for mental exertions, for literary, civil, or political services. A *recompense* is voluntary, both as to the service and the returns; it is an act of generosity: *requital* is the repayment of injuries or a return for a kindness; the making of the latter is an act of gratitude. A *satisfaction* may be imaginary, both as to the injury and the return. It is given for personal slights or injuries, and depends on the disposition of the person to be satisfied whether it really satisfies or makes full reparation."

Complaisance, *n.* (kŏm′-plā-zăns′ or kŏm-plās′-ăns), a disposition characterized by a desire to please, oblige or gratify.

Syn.: deference, condescension, affability, courtesy, urbanity.

Ant.: churlishness, moroseness, austerity.

Syn. dis.: "All these qualities spring from a refinement of humanity; but *complaisance* has most of genuine kindness in its nature; *deference*, most of respectful submission; *condescension*, most of easy indulgence. *Complaisance* is the act of an equal; *deference*, that of an inferior; *condescension*, that of a superior. *Complaisance* is due from one well-bred person to another; *deference* is due to all superiors in age, knowledge, or station, whom one approaches; *condescension* is due from all superiors to such as are dependent on them for comfort, support and enjoyment."

Confirm, *v.*, to add strength to, to fix or settle, to assure.

Syn.: corroborate, establish, ratify, strengthen.

Ant.: weaken, shake, upset, refute, cancel.

Syn. dis.: "The idea of strengthening is common to all these terms, but under different circumstances: *confirm* is used generally; *corroborate*, only in particular instances. *Confirm* respects the state of a person's mind, and whatever acts upon the mind: a testimony may be *confirmed* or *corroborated;* but the thing *confirms*, the person *corroborates*. *Established* is employed with regard to whatever is external: a report is *confirmed*, a reputation *established*."

Consider, *v.*, to think on with care; to look at carefully.

Syn.: reflect, ponder, meditate, weigh, contemplate.

Ant.: disregard, ignore, conjecture, despise.

Syn. dis.: "The operation of thought is expressed in all these words, but in the case of *consider* and *reflect*, particularly, it varies in the circumstances of the action. *Consideration* is employed for practical purposes; *reflection* for matters of speculation or moral improvement. Common objects call for *consideration;* the workings of the mind itself, or objects purely spiritual, occupy *reflection*. *Meditation* is internal; *contemplation* external: the poet, for instance, *meditates;* the astronomer *contemplates*."

Consummate, *v.* (kŏn′-sŭm-āt), to finish by completing what was projected, *adj.* (kŏn-sŭm′-āt), carried to the utmost extent or degree.

Syn.: (*v.*) to complete, to finish; (*adj.*) perfected, finished, completed.

Ant.: interrupt, frustrate, nullify, mar, spoil, defeat; faulty, defective, imperfect.

Syn. dis.: "*Completion* is the filling up of a design or purpose; a work is *completed* when the plan of it is realized. *Consummation* is applied to matters which must reach a certain degree or extent to make them complete. *Completion* is more external, *consummation* more internal. *Consummation* is the completion of

the idea or definition: it is also used in the sense of a gathering up in one of many things; as 'the event of to-day is the *consummation* of the hopes of many years.'"

Contrive, *v.*, to plan out; to frame or devise.

Syn.: devise, invent, concert, manage, plot, scheme.

Ant.: chance, hit, venture, hazard, bungle.

Syn. dis.: To *contrive* denotes effort, or a series of efforts, of inventiveness; it is to form, find, or adapt means to an end by the exercise of practical ingenuity *Devise* implies not so much the finding ways of using means, as finding the means themselves. *Invent* represents the practical aspect of *contrive*, the invention being the more perfect in proportion to the lasting character of the contrivance. *Concert* commonly implies the joint assistance of others; *manage* denotes rather a judicious or ready employment of means extemporized on the occasion."

Crisis, *n.*, the decisive point in any important affair.

Syn.: conjuncture, emergency, exigency, turning-point.

Ant.: course, ordainment, provision.

Syn. dis.: "*Crisis* (Gr. *krisis*, a decision) denotes literally what decides or turns the scale. It is commonly used as a turning-point in affairs, before it is known whether the issue will be for better or worse. *Conjuncture* is a compound *crisis*, or a state which results from the meeting of several external circumstances to form it. *Emergency* is an unforeseen occurrence or combination, which calls for immediate action. *Exigency* is a minor emergency. A *crisis* is the high-wrought state of any affair which immediately precedes a change; a *conjuncture* may be favorable; a *crisis*, alarming."

Cultivation, *n.*, the act or practice of cultivation; husbandry; study, care, and practice directed to improvement or progress.

Syn.: Culture, civilization, refinement; tillage.

Ant.: neglect, discouragement, extirpation.

Syn. dis.: "Cultivation is used both in a physical and in a metaphorical sense. It denotes the use of art and labor and all things needful to the production of such things as grow out of the soil. The same force belongs to the metaphorical or moral use of the term, as in the *cultivation* of the mind, or of special habits, or of literature, or the arts. *Culture* is commonly employed to denote the specific cultivation of some particular kind of production for the sake of its amelioration. In this sense the term is used of the *culture* of the human race or human mind (but not of moral habits), to indicate such civilization and training as result in the raising of the condition of the race. *Civilization* and *refinement* are respectively the first and the final stage of *cultivation* as regards the condition of men in their social capacity; the first meaning the mere redeeming from a state of barbarism; the second a high condition of intellectual culture in the liberal arts and social manners."

Debar, *v.*, to shut out, exclude, prevent, stop, oppose.

Syn.: deprive, hinder, prohibit, disqualify, exclude, preclude, forbid.

Ant.: admit, enclose, embrace, entitle, qualify, permit.

Syn. dis.: "*Debar* indicates merely an act of preventing power in reference to those things which we do ourselves, or which come about as the act of others, or of circumstances. *Deprive* denotes the coercive taking away of what one possesses, either in fact or in prospect, while *debar* relates to what one does not as a fact possess or attain to. *Prohibit* and *forbid* have the force of interdiction by authority, or *debarring* by the use of words of command. *Disqualify* is to debar by attaching personal and inherent prohibition from some privilege, office, or dignity; *exclude* is formally to shut out; *preclude* is to exclude by indirect means."

Debate, *n.*, contention in words; discussion between two or more persons; *v.*, to argue, to combat, to contest.

Syn.: deliberate, argue, dispute, discuss, contend.

Ant.: yield, concede, admit, allow, surrender.

Syn. dis.: "To *debate* supposes always a contrariety of opinion; to *deliberate* supposes simply the weighing or estimating the value of the opinion that is offered. To *argue* is to say all that can be said for or against a proposition or a case; to *dispute* is always antagonistic: it is to argue against something as held or maintained by another. *Contend* is the opposite to *dispute;* for, as dispute is to attack and endeavor to shake what is held or advanced by another, so *contend* is to argue urgently in favor and support of something held by oneself. *Discuss* is more commonly applied to matters of opinion, while *debate* belongs rather to action or proceedings."

Decry, *v.*, to cry down, to censure, to clamor against.

Syn.: disparage, depreciate, detract, degrade, traduce.

Ant.: extol, praise, laud, eulogize.

Syn. dis.: "The idea of lowering by words the current value, is common to most of these terms. *Decry* relates primarily to the inherent value of the thing itself; *depreciate* to the estimate of it as formed or expressed by oneself; *disparage* to the estimate as formed by others. We *disparage* a man's performance by speaking slightingly of it; we *detract* from the merits of a person by ascribing his success to chance; we *traduce* him by handing about tales that are unfavorable to his reputation."

Defer, *v.*, to yield or give way to the opinion of another; to put off, retard, adjourn.

Syn.: delay, postpone, prolong, protract, procrastinate.

Ant.: hasten, quicken, expedite, press, urge.

Syn. dis.: "To *delay* is simply to place an indefinite term between the present and the commencement of the thing delayed: this may be either a voluntary act or the result of circumstances. In this point, *defer* differs from *delay*, expressing always a voluntary act: *defer* is more specific; *delay*, more indefinite. *Postpone* implies a definite intention to resume what for the present is put off; *procrastinate* is to *delay*, *defer* or *postpone* through indolence or general unwillingness to commence action. *Prolong* and *protract* differ from the former in implying something actually commenced, as a period or a transaction: there is very little difference between them; but we commonly use *protract* in the sense of *contriving* to lengthen."

Delicate, *adj.*, of a fine texture; nice or pleasing to the taste; nice and discriminating in the perception of beauty or deformity; considerate of the wishes and feelings of others.

Syn.: nice, fine, dainty, soft, sensitive, fragile.

Ant.: coarse, raw, rough, common, robust, vigorous.

Syn. dis.: "These terms are all employed both of the character of objects and of the faculties which perceive and treat of them. As to the quality of objects, that is *delicate* which is refinedly agreeable, or likely to please a highly-cultivated taste. When used of persons, in a moral sense, the term expresses an appreciation of what is extrinsically delicate, a shrinking from harshness and coarseness, a consideration for others, and an appreciation of the less prominent beauties and graces of things.

"*Nice*, when applied to objects, is not a word of high meaning. It indicates such a degree of excellence or agreeableness as people in general would approve or enjoy. When used of persons or their powers of discrimination, it seems to combine exactness of knowledge with a certain fastidiousness of requirement. The *fine* is that which combines delicacy and power or grandeur, as a *fine* speech, a *fine* landscape; it also implies keen and discriminative power, as a *fine* distinction.

"The *delicate* is a high degree of the *fine*, as a *fine* thought, which may be lofty; *fine* feeling, which is acute and tender; a *delicate* ear in music, an ear which is offended with the smallest discordance. A person is *delicate* in his choice, who is guided by taste and feeling; he is *nice* in his choice, who adheres to a strict rule."

Describe, *v.*, to represent in words, or by signs or drawings.

Syn.: depict, characterize, represent, relate, narrate, portray.

Ant.: misrepresent, mystify, distort, confound, confuse.

Syn. dis.: "*Describe* is to write down an account; hence, to give an account, whether in writing or in spoken words. *Description* belongs to the external manifestation of things, and ought to be full, clear and explicit. *Depict* (*lit.* to paint) refers to the vivid *description* of anything which may be brought with more or less distinctness to the mind's eye. *Characterize* is employed in moral *description* of what *represents* the subject by its leading feature or features. Hence, a whole course of conduct, or a whole class of character in men, may be said to be *characterized* by some *one* strong and *distinctive* epithet which sets a peculiar mark and stamp upon it."

Deter, *v.*, to hinder or discourage by consideration of danger, difficulty, or great inconvenience.

Syn.: discourage, dishearten, obstruct.

Ant.: encourage, incite, prompt, persuade.

Syn. dis.: "*Deter* and *discourage* denote gradually the action of the judgment; *dishearten*, an influence upon the spirits. One is *deterred* by formidable difficulty or opposition; *discouraged* by the representations of advisers, or by a calm estimate of the nature of the case; *disheartened* by anything that robs us of spirit, energy, or hope. *Disheartened* applies only to persons; *discourage* both to persons and their efforts."

Diction, *n.*, style or manner of expressing ideas in words.

Syn.: phraseology, diction, style.

Syn. dis.: "In the order in which these words here stand, they advance from the particular to the more general. *Phraseology* is the employment of particular expressions in such a way as to be distinctive, but not as a matter of praise or blame. We do not speak of good or bad *phraseology*. *Diction* is the construction, disposition, and application of words. The term is employed in cases where clearness and accuracy are at stake; while *style* is employed of the characteristics of productions and performances which lay claim to an artistic character, as writing, oratory, painting, and the like."

Diffidence, *n.*, want of confidence; distrust of oneself.

Syn.: distrust, mistrust, misgiving, suspicion.

Ant.: boldness, effrontery, shamelessness.

Syn. dis.: "*Diffidence* is used only of ourselves; it is a *distrust* of our own powers, with or without sufficient grounds. *Distrust* is want of trust both as regards ourselves and others, and relates not only to the power but to the will and the schemes, efforts, and the like. *Mistrust* relates not to the power, but only to the will, and hence can be used only of animate beings: to *distrust* is to doubt the sufficiency; *mistrust*, to doubt the integrity. *Misgiving* is entirely internal and reflective; it is the spontaneous suggestion of *distrust*. *Suspicion* is the tendency to believe ill, without adequate and sometimes, indeed, without any proof."

Directly, *adv.*, straightway; soon; without delay.

Syn.: immediately, instantly, instantaneously.

Ant.: by-and-by, afterwards.

Syn. dis: "*Directly* is most applicable to the actions of men; *immediately* and *instantly* to either actions or events. *Immediately* and *instantly*, or *instantaneously*, mark a quick succession of events, but the latter in a much stronger degree than the former. *Immediately* is negative; it expresses simply that nothing intervenes; *instantly* is positive, signifying the very existing moment in which the thing happens. A course of proceeding is *direct*, the consequences are *immediate*, and the effects *instantaneous*."

Discernment, *n.*, power of perceiving differences in things or ideas.

Syn.: penetration, discrimination, judgment, discretion.

Ant.: heedlessness, dulness, density, blindness, inobservance.

Syn. dis.: "*Discernment* is combined keenness and accuracy of mental vision; it is first penetrative, then discriminative. *Penetration* is the power of seeing deeply into things; *discrimination* is discernment in minute particulars, and of such a kind as leads to the acting upon the differences observed. *Judgment* is the faculty of deciding in practical matters with wisdom, truly, skilfully, or accurately: it has to do not so much with actualities, like *discernment* and *penetration*, but with possibilities. *Discretion* is cautious *discernment*, and has for its result the avoidance of such errors as come from want of self-control or want of judgment."

THE SCIENCE OF FAMILIAR THINGS:

V.—PARALLELOGRAM OF FORCES

A BODY may be acted upon at the same time by two or more forces which tend to move it in different directions, and it often becomes desirable to determine what the effect of their combined action is or will be. If there are but two forces acting and they act either in the same or in contrary directions, their "resultant" obviously may be found by taking their sum, in the first case, their difference, in the second. This is the same method as we employed in the composition of two velocities under the same circumstances. We are now to show, by means of a simple experiment, that under all circumstances the method employed for the composition or the resolution of velocities may be used with forces.

Experiment A flat-iron is suspended by a stout cord three or four feet in length from a spring balance, which itself is hung upon a peg in the wall of the room. The balance indicates that the iron has a weight of four pounds. This, as we understand, is a measure of the force with which gravity pulls the iron downward and also of the force with which the spring of the balance pulls it upward; for let us not forget that there are here two forces, acting in contrary directions, and that it is because each exactly balances the other that the iron remains at rest. This upward-pulling force is the force with which we are to experiment.

We attach to the iron a second cord of the same length as the first, and we fasten the free end of this cord to the hook of a second spring balance. Pulling at the ring of this balance, we draw the weight to one side, and we find that by so doing we relieve the first balance of a part of the strain upon it, the balance now indicating a pull of less than four pounds, while the strain upon the balance held in the hand is found to vary in amount with the distance to which we pull the iron and the direction of the pull. We have "resolved," or decomposed, our force into two others, which act at angles to the direction of its pull, and which, clearly, are its equivalent, since together they sustain the same weight. We have now to ascertain experimentally how these two component forces compare in strength with the original. We begin by attaching the second balance to a peg in the wall at the same height as the first and at such a distance from it that the two cords which now sustain the iron are at right angles with each other; that is, each slants from the balance toward the iron at an angle of forty-five degrees with the horizontal. We find that the strain is now the same upon each balance, each indicating a pull of a little less than three pounds—more exactly, 2.83 pounds.

Drawing the Parallelogram Now for pencil and paper. Forces, as well as velocities, may be represented by straight lines. Indeed, we may represent any quantities by lines, provided we make the lines proportional in length to the quantities themselves. Representing one pound by a line one inch in length, we will draw a diagram of the forces with which we are experimenting. To represent the forces exerted by the balances, we draw two lines, each 2.83 inches long, sloping upward to the right and left from a point, A, at angles of 45 degrees with the horizontal—the directions in which the forces act. Next, from the point A, where the weight is supposed to be attached, we draw a line four inches long, perpendicularly upward. This line represents the four-pound upward pull required to balance gravity. Next, we draw two lines connecting the upper ends of these three. The resulting figure is a parallelogram, of which the four-inch line is a diagonal.

We may vary the experiment by attaching the second balance to pegs at different heights and so placed that the iron is drawn to different distances from its first position. In every case when we have drawn our diagram, representing the forces exerted by the balances by lines drawn in the directions in which the cords slope, each line being given a length which represents, on a scale of one inch to the pound, the force for which it stands; that is, the pull of the

balance on the corresponding cord, the perpendicular line always being four inches long — when we have drawn our diagram thus we shall have in every case a parallelogram, of which the four-inch line is a diagonal.

The fact brought out by this experiment — and a very important fact it is in its application to the solution of problems involving forces — may be stated thus:

When three forces are represented in a parallelogram, two of them by two adjacent sides and the third by the diagonal drawn from the point at which they meet, the two forces represented by the sides are the equivalent of that represented by the diagonal. The rules given on page 476 are, therefore, applicable to forces as well as to velocities.

Illustrative Example

To guard against any possible obscurity about this matter, we will solve a problem of forces by means of a parallelogram.

The handle of a lawn-mower is five feet in length. A man using the mower holds the end of the handle three feet from the ground. What part of the strength which he exerts in pushing the mower is effective in moving it; what part is wasted?

Draw a horizontal line, to represent the level of the ground, and from a point, A, in this line — the point at which the mower is supposed to be — draw a line five inches long, sloping upward at an angle such that its upper end, B, is three inches above the horizontal. This line slopes at the same angle as the handle. It represents the direction in which the man pushes, and, in drawing our diagram, it may be taken to represent also the force with which he pushes. From the point B draw a line perpendicularly downward until it strikes the horizontal line at a point which may be marked C. This line will be three inches long. At A erect a second perpendicular of the same length, and from its upper end, D, draw a line horizontally to B. The resulting figure is a parallelogram, two of its sides being parallel because they are both horizontal, and two, because they are both perpendicular. The diagonal AB represents the force exerted by the man; the sides AC and AD represent the components into which this force is decomposed, AC acting horizontally to push the machine forward, AD acting perpendicularly to press it downward. Measuring the line AC we find its length to be four inches. Hence we conclude that of every five pounds of force exerted by the man in the direction in which the handle slopes, only four pounds are effective in moving the machine, or, to state the result in the way usual in such cases, only 80 per cent. (four-fifths) of the force exerted is effective.

Is the rest of the force — the 20 per cent. which does not contribute to moving the machine — merely wasted? Looking at the diagram we may see that it is worse than wasted, for the component AD pressing directly downward upon the machine will obviously make it "work harder" than it otherwise would. It is clear, then, that a man working a lawn-mower throws away considerably more than 20 per cent. of his labor.

PROBLEMS

1. Two forces, one of 40 pounds the other of 60 pounds, are acting at an angle with each other. What is the resultant, *a*, when the angle is 90 degrees; *b*, when it is 45 degrees?

2. A person weighing 150 pounds is lying in a hammock, which is swung between two trees 25 feet apart. One rope of the hammock is attached at a point eight feet from the ground; the other, at a point six feet from the ground. The central point of the hammock — the point toward which the two ropes slope — is two and a half feet from the ground. What is the strain in pounds on each rope?

3. A roof which slopes at an angle of 30 degrees with the horizon is covered with a mass of snow weighing 500 pounds. What portion of this weight bears directly upon the roof and must be sustained by the rafters? What becomes of the other portion?

4. How does the wind act to drive a windmill? How, to propel a vessel in a direction which makes an angle with that of the wind?

Study these two problems with the aid of a diagram, decomposing the single force exerted by the wind, and see what you can make of them.

ANSWERS TO PROBLEMS (p. 477)

1. The resultants of the two velocities in the four cases specified are, *a*, 130 feet; *b*, 30 feet; *c*, 94.34 feet; *d*, 120.62 feet a minute.

2. The resultant is 52.93 feet a minute.

3. This problem admits of a great number of answers, but within certain limits. If the velocities are in the same direction, they are 66⅔ and 33⅓ feet a second; if in opposite directions, they are 200 and 100 feet a second. If they are in directions which make an angle with each other they may lie anywhere between these limits, as is clear when we represent them by the sides of a parallelogram of which a line standing for 100 feet, the velocity to be decomposed, is a diagonal. The only condition is that one side of this parallelogram shall be twice as long as the adjacent side. Any number of parallelograms can be drawn which will answer to this description, all having the same diagonal, but the sum of two adjacent sides in such a figure cannot be less, nor their difference greater, than the diagonal.

4. The ship is "northing" at the rate of 9.9 miles an hour, and "easting" at the same rate.

5. The velocity is 56.1 feet a second; the direction is at an angle of about 18 degrees with the direction of the track.

ANSWERS TO PROBLEMS (p. 478)

1. The ball will rise to a height of 50 feet, and will strike the ground at a distance of 200 feet from the batter.

2. To shoot a ball to the greatest distance possible the gun should be elevated to an angle of 45 degrees. If the angle is greater than this, the ball will mount higher, but it will not be carried so far in a horizontal direction; if the angle is less than 45 degrees, it will neither mount so high nor be carried to so great a distance.

SOLVING PROBLEMS BY MEANS OF DIAGRAMS—II

THESE hints and directions being designed to be eminently practical, we shall suppose ourselves to be provided only with such instruments as are indispensable. We have a good ruler and a pair of dividers, or compasses, but we have no "protractor" for laying off angles. We can, however, easily make one in the following way:

Laying off Angles

Open the dividers to a distance of two inches, and describe a circle with them on a small sheet of smooth card-board. Draw a line horizontally through the centre of the circle. Plant one foot of the dividers, without changing their opening, at the point where the diameter cuts the circle on the right, and place the other foot at a point higher on the circle. The arc of the circle included between the points of the dividers contains 60 degrees. Measure off in the same way beyond this two other arcs of the same length. In doing so you will pass half way around the circle—180 degrees. Next divide each of these arcs into two equal parts. You will get divisions containing each 30 degrees. Divide each of these into three equal parts, and your semicircle will be divided into spaces of 10 degrees each, and by halving each of these you can get five-degree spaces. Single degrees can be estimated. Finally, number the divisions on your scale, beginning on the right, 5, 10, 15, 20, and so on up to 180. Your protractor is completed. It is to be kept as one of your instruments. The way of using it is illustrated in the following example:

Problem Solved by Diagram

I wish to find the length of the longest diagonal of a parallelogram, two adjacent sides of which are 20 and 30 rods in length and are inclined to each other at an angle of 35 degrees.

Solution:—Adopting a scale of 10 rods to the inch, I draw a line, AB, three inches long, for the long side of the figure I am to construct. I next open my dividers to a width of two inches—the length of the radius of my protractor—and setting one foot at A at one end of the line, I describe an arc of a circle which cuts the line. This being a part of a circle of the same size as that

of my protractor, degrees upon it will have the same length as those of my scale. I now measure off on this arc 35 degrees from the point from where the arc cuts the line AB, taking the measure from the scale. A line drawn through the point in the arc thus found to the point A will make the required angle of 35 degrees with the line AB. On the line thus laid down I now measure off two inches from the point A. I now have two sides of the required parallelogram, which I complete by adding two other sides equal to them in length and parallel with them. Lastly, I draw the required diagonal, and I find that it measures four inches and three-quarters large. I call the measure 4.76. This multiplied by 10, since every inch on my diagram stands for 10 rods, gives me, as the answer to my problem, 47.6 rods.

The above given is an actual solution of this problem, every step of it, including the making of the "protractor," having been taken as described. After the answer given above had been obtained, the problem was solved by trigonometry, and it was found that the correct answer is 47.76 rods. The solution therefore illustrates, not merely the method of using a diagram for this purpose, but also the degree of accuracy which may be attained with even a small diagram. By constructing a larger diagram and using a little more care in the measurements, a much closer approximation to a correct solution could be obtained.

COOLING BY EVAPORATION

A PERSON can "catch a cold," as the writer of this can testify from a very recent experience, by injudiciously sitting in a draught of air, though the temperature of the air may be that of the average summer heat. The unpleasant result is brought about, as we all know, by the chilling of some susceptible portion of the body — to say exactly how, is within the province of the physician — and an interesting question arises, how the body can be chilled by a current of warm air.

In our search for an answer to this question, we will begin by making certain that we have a clear perception of what is meant by chilling or cooling.

In common speech we class objects, with a reference to their temperatures, as things that are *hot*, *warm*, *cool* and *cold*. Each of these terms may be qualified in a manner to make a great number of gradations. Thus, we may say of a particular body that it is very hot or intensely hot, or it may be only quite or very warm without being hot; and we may qualify coolness and coldness in the same way. Furthermore, the same body may be at one time hot, at another cold. Under these circumstances the question arises, where is the dividing line between hotness and coldness; or, in other words, what is the essential difference, if any difference there is, between the two things? We need to reflect but a moment to see that the whole difference is merely one of sensation. We take as our starting-point in drawing the distinction the temperature of our own body. If any object held in the hand is at a higher temperature than that of the hand, we say, ordinarily, that it is warm or hot; if at a lower temperature, we say it is cool or cold. There is no other reason for our considering that there are two distinct things involved in the matter — heat and cold — but clearly we are dealing in all of these cases with one and the same thing, namely, heat, and the differences are simply of degree.

Obvious as this fact may seem when it is thus distinctly stated, we by no means keep it habitually in view in our observation of what takes place around us, but we practically regard, as well as speak of, heat and cold as though they were distinct and antagonistic things. When the sun pours its potent rays down upon the surface of the earth we see no mystery in the fact that the ground, the rocks and pools of water become warm, for the sun is a hot body and we can readily conceive that it has imparted to them some portion of its heat; and when, in winter, the same rocks become cold and the pools of water freeze, we find these facts equally easy of explanation; the cold north winds have swept them and have imparted to them some of their coldness — have cooled them off. Our explanation in the first case is right, according to the views of physicists. It is true that the

warmth of the earth's surface is due to heat radiated from the sun. But in the second case we are wrong. The explanation is, not that the winds have put coldness into the rocks, but that they have taken heat out of them.

This brings us directly to one of the first and simplest of the laws of heat, namely, that when two or more bodies of different temperatures are placed in close proximity to each other heat is transferred from the warmer to the cooler bodies, until all are of the same temperature. The warm bodies cool; the cool bodies become warm. Take a lump of ice into a warm room, and it melts. To melt the ice requires heat. Where does the heat come from? It comes from the various objects in the room. Each of these objects parts with a small portion of its heat, to warm and cheer up the new-comer; and were it possible in any way to prevent more heat from entering the room from the outside, it would be found, after the ice had been melted and the temperature of the water into which it had dissolved had been raised to that of the surrounding objects, that there was in the room precisely the same amount of heat as before the entrance of the ice, though since there is one additional object to share in the heat the temperature of all is a trifle lower than at first. Or, instead of taking a lump of ice into a room, place a shoulder of lamb in a refrigerator. A like occurrence takes place. Ordinarily we say that the meat is cooled by the ice; certainly, its temperature falls. But the transfer of temperature is in the opposite direction to that which is commonly supposed. Scientifically regarded the case is one of warming, rather than of cooling. The meat does its best to heat the ice, and in the futile attempt it parts with a portion of its own heat.

The same thing happens to the rocks and the pools of water on a frosty night. They part with heat in an effort to warm the air. But the air is so extensive that its temperature rises inappreciably while that of the rocks and the water may be depressed below the freezing point. The effect of the chilly winds upon ourselves is similar. We part with heat to equalize our temperature with that of our surroundings, and it requires a supply of suitable clothing to prevent the loss from becoming a matter of serious consequence. Heat parted with in this way is said to be radiated. But radiation is not the only means by which heat can be passed from one body to another; and this brings us to our starting-point — the cooling of a body by a current of warm air.

To transform a liquid into a gas requires a greater or less amount of heat. Water becomes steam at the temperature of 212 degrees Fahrenheit, — that is, at the sea level, for atmospheric pressure has much to do with the temperature at which water boils. This is the highest temperature at which water can exist in the liquid form, though not the lowest at which it passes into vapor. At this temperature the change takes place rapidly; but at all temperatures water is continually being vaporized by the process familiar to us all as evaporation. The rate at which evaporation takes place depends upon the temperature and dryness of the air. The air at any given temperature is capable of containing a certain amount of aqueous vapor and no more. When supplied with this amount the air is said to be saturated; since it can contain no more, evaporation must for the time cease.

Now, the point essential for our present purpose is that to change water into vapor, whether rapidly or by the slow process of evaporation, requires heat. Every particle of vapor must have obtained heat from some source, else it could not have become vapor. Whence is the heat derived in the case of evaporation? It comes from whatever the water at the instant of its change into vapor happens to be in contact with. It comes partly from the air, partly from the surface over which the water is spread, and whatever it is taken from must suffer a fall in temperature. Wet the back of your hand and expose it to a current of air. You have a sensation of coolness which you might attribute to coolness in the air did not your thermometer stand at 80 degrees. The air is warm, and you would so perceive it were your hand perfectly dry. The coolness is in reality due to the rapid evaporation of the moisture on your hand — an evaporation which will be the more rapid the drier the air is and which is facilitated by the current, which carries away the vapor as fast as formed.

GEO. SENECA JONES.

QUESTION DEPARTMENT OF THE HOME UNIVERSITY LEAGUE

For the benefit of those whose acquaintance with the Question Department begins with this issue, it may be well to say that SELF CULTURE readers are expected to look up in the Encyclopædia Britannica each day the answer to the question given for that day. This will seldom require more than one hour, but in the event that one evening's leisure does not suffice, it will be easy to continue the investigation the following evening while the subject is still fresh in the reader's mind. The conscientious pursuit of the home study involved in this department will lead to the possession of a large and varied stock of general information.

HE answers to SELF CULTURE questions for September will be found in various volumes of the new Encyclopædia Britannica. The volume and page are indicated after each question.

Sept. 1. Who were the Phrygians, where was their country situated, and by what tribe was their monarchy overthrown in the 7th century B. C.? Vol. XVIII, p. 849

Sept. 2. Who is said to have written one of the finest pieces of sarcastic humor in the English language? Vol. II, p. 325

Sept. 3. What was the strength of the rank and file of the United States army, as fixed by Congress, in 1790? Vol. II, p. 619

Sept. 4. What were the personal characteristics of the great English classicist, Dr. Richard Bentley, who was, in Macaulay's opinion, "the greatest scholar that had appeared in Europe since the revival of letters?" Vol. III, p. 578

Sept. 5. Thackeray speaks of a Court satirist as "being lapped in cotton, and had his plate of chicken and saucer of cream daily, and frisked and barked and wheezed and grew fat, and so ended." Who was he, and what did he write? Vol. X, p. 119

Sept. 6. Who was regarded, at the beginning of the century, as the greatest tragedy actress of her time? Vol. XXII, p. 33

Sept. 7. Under what Dutch governor of New Amsterdam was the colony of New Sweden broken up? Vol. VII, p. 44

Sept. 8. On whose property, and where, was gold first discovered in California which changed the whole history of the State? Vol. XXI, p. 132

Sept. 9. Who shares with Sir Henry Rawlinson the honor of having been one of the first decipherers of the cuneiform inscriptions of Nineveh? Vol. XXIII, p. 27

Sept. 10. To what depth in the ocean is animal life known to exist? Vol. XXIII, p. 310

Sept. 11. What President has the distinction of being called "the father of the Constitution?" Vol. XV, p. 183

Sept. 12. In what year was the Mexican Republic proclaimed and acknowledged by Spain? Vol. XVI, p. 220

Sept. 13. What is the supposed origin of the term "Huguenot," and when was it first applied to the Protestants of France? Vol. XII, p. 337

Sept. 14. Give the dates of the voyages of the two Cabots (John and Sebastian), upon which England founded her claim to North America. Vol. IV, p. 622

Sept. 15. What author, associated with Madame Recamier, marks by his writings the transition from the old classical to the modern romantic school in France? Vol. V, p. 438

Sept. 16. Under what treaty between the United States and Mexico (also find date) did this country acquire Arizona and New Mexico, and so reduce Mexico to its present limits? Vol. XVI, p. 220

Sept. 17. What was the name of the remarkable American woman who aided the Italian cause in 1848, became a marchioness, and afterwards had the misfortune to be drowned? Vol. XVIII, p. 57

Sept. 18. What English bishop, on being exiled from England for taking part in Jacobite plots, joined the Pretender in France, yet found a grave in Westminster Abbey? Vol. III, p. 55

Sept. 19. What period is assigned in which the Greek poetess Sappho lived, whose fame rivals that of Homer? Vol. XXI, p. 303

Sept. 20. Name the battle, fought near a small town in Moravia, in which Napoleon, in 1805, occasioned a loss of over 40,000 men to the Russian and Austrian army. Vol. III, p. 102

Sept. 21. What liberal-minded French bishop took an active part in the French Revolution, yet exerted himself on the side of mercy, though he was afterwards guillotined? Vol. IX, p. 52

Sept. 22. In which town, sometimes styled the "German Versailles," is to be found Frederick the Great's famous country palace of Sans Souci? Vol. XIX, p. 599

Sept. 23. When, where and how was the Rosetta Stone discovered which furnished to archæologists a key to the deciphering of Egyption hieroglyphics? Vol. XX, p. 851

Sept. 24. Who was the woman whose Memoirs of her husband (one of the finest biographies in the language) furnishes the most graphic picture of the period of the English Commonwealth? Vol. XII, p. 411

Sept. 25. What governor of New England, in 1748, restored a healthy condition of trade by a measure which for a time redeemed the depreciated paper currency? Vol. XII, p. 412

Sept. 26. When and where was the battle fought which marked the outbreak of the French and Indian War? Vol. XXIV, p. 388

Sept. 27. What American painter was one of the founders and for over twenty years president of the English Royal Academy? Vol. XXIV, p. 505

Sept. 28. Account for the phenomena and the formation of whirlpools. Vol. XXIV, p. 541

Sept. 29. For what is Domesday Book noted, and what was the object of taking the survey which it contains? Vol. VII, p. 349

Sept. 30. Explain why the destructive wheat midge received the name of the "Hessian Fly," and state how it commits its ravages. Vol. XI, p. 781

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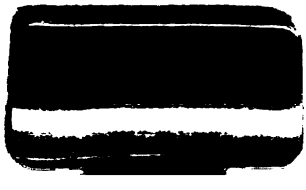

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